Medical Times

A Monthly Journal of Medicine, Surgery, and the Collateral Sciences

Vol. XLII., No. 6 NEW YORK, JUNE, 1914 One Dollar a Year Fifteen Cents a Copy

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Is Smoking Detrimental to Boys and Young Men?

Attention is being attracted anew to the use of tobacco by the decisions of some of the great commercial organizations. Newspaper reports announce the condemnation of cigarette smoking by some railroads on the part of their employes on the ground that the habit dulls the intellect. A prominent automobile manufacturer, who recently came into public notice by his profit-sharing plan, has roundly condemned cigarettes, and is said to be forbidding their use among his men.

The latest to decry the unfortunate "coffin nail" is Thomas A. Edison, who has posted signs bearing this warning all over his plant in West Orange, N. J.:

Cigarettes NOT TOLERATED.
They Dull the Brain.

Mr. Edison analyzed more than a score of different brands of cigarettes, and the newspapers say he found that while they contained many grades of tobacco, all the cigarettes were poisonous.

The New York *Times* thus quotes Mr. Edison on the subject:

"That poison attacks the brain and works havoc with a man's mental activity. His mind becomes clouded. Evaristo Madero, brother of the late President of Mexico, told here a few days ago that men, women and children are inveterate smokers of cigarettes in the southern republic. That is why Mexicans as a race as not clear headed."

There is nothing sentimental or paternal about this matter so far as Mr. Edison is concerned, as he is reported by the press to smoke cigars and chew tobacco. He regards it largely from the standpoint of business, although we suspect from his previous career that he is quite concerned with the moral welfare of his people. From a business viewpoint it is necessary that his men should be possessed of keen brains, and that they should be in a state of physical and mental perfection at all times. He believes cigarette smoking renders persons less able to exercise their faculties, and he therefore banishes the offending cigarette.

As we see it, the inhalation of smoke is attended with danger when persistently practiced, and as practically all cigarette smokers inhale, the constant use of the weed in this form, in any considerable quantities, is likely to be attended with bad results.

It is not the use by adults, but the abuse of cigarettes that figures. Moderation in cigarette smoking is difficult of performance. One calls for another, on account of the shortness of the smoke. It is easy to consume a number in the course of a day. Inquiry among users shows that the average cigarette smoker gets rid of a box of ten each day. If this is true, physical deterioration, especially of a circulatory and respiratory nature, will generally follow in due course.

The concensus of opinion is that smoking is harmful to boys and young men, no matter in what form the tobacco may be, and that immoderate cigarette smoking is injurious to adults as well as youths.

NOTED BALL PLAYER ABJURES TOBACCO.

EDWARD T. COLLINS, A.B.,

SECOND BASEMAN OF THE PHILADELPHIA AMERICAN BASEBALL TEAM (WORLD'S CHAMPIONS).

Philadelphia.

I do not feel that I am in a position to judge as to the merits or demerits of the use of tobacco, as I have never used it in any form. Throughout my course at Columbia University, where I engaged in athletics, and in my career as a professional base ball player, I have found it incumbent upon me to be in prime physical condition at all times. I did not take up smoking as a boy, and as I have no desire for it, I have carefully refrained from the use of tobacco as a man, in the belief that I should conserve my powers to the fullest extent.

Smoking may or may not be harmful to young men, but why should a boy take a chance on something which might have a deteriorating influence, when he can get along as well without taking that chance. In these days of active competition, it is necessary for a man to put forth his best efforts if he is to attain success, and he should do nothing which will detract from his natural and physical abilities in that direction.

A REVIEW OF AUTHORITIES OPPOSED TO TOBACCO.

EDWARD H. CLEVELAND, M. A.
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An unprejudiced inquiry into the mental and physiological effects of tobacco smoking establishes the conviction that this habit, even in moderation, is definitely and permanently injurious to both mind and body. So many, indeed, are the scientific facts that point directly to this conclusion that it is difficult to select the most important ones.

The defenders of the habit, in their efforts to find excuses for it, have furnished some of the strongest arguments against it. No one doubts that these arguments, when presented fairly and without exaggeration, would have greater influence in correcting the evil were it not for the positive effects of the poisonous drug in dulling the senses of those who use it.

We are not speaking of excessive use, but of moderate use, be it noted. Aside from the well-known principle that moderate use leads to excess, and always tends in that direction, as experience abundantly proves, no one defends the excessive use or abuse of tobacco. Not a single advocate or apologist for its use will venture to claim that the excessive use is beneficial.

All agree that tobacco is a poison, to be used in moderation, if at all. This article is written to remind its readers of the very simple proposition that the habitual smoking of tobacco in moderation will, if given time enough, produce similar results in the heart, brain, stomach, lungs and other vital organs to those brought about more rapidly by smoking to excess.

The burden of proof lies with the smokers. It is for them to prove what has never yet been proved, that the habitual drugging of the organs and faculties of this wonderfully delicate human organism, even moderately, is without serious and permanent ill effects. Either this position must be successfully established or tobacco smoking is suicidal. In the face of facts, only too apparent, there is no loophole of escape from this alternative.

The following are well recognized direct results of moderate habitual smoking: Tobacco blindness, a most stubborn form of permanent affection of the eyes; cancer of the lips and of the tongue and of the throat, diseases almost wholly confined to smokers; Bouchard of Paris, an authority on diseases of the heart and blood vessels, names tobacco as one of the leading causes of these deadly maladies, which have increased enormously in the last ten years; 10 per cent. of all smokers have albumen in the urine; Dr. Wright of London showed that nicotine lowers the power of resistance of the human body against tuberculosis, and post-mortem examinations at Phipps Institute showed that smokers are twice as subject to tuberculosis as non-smokers. Standard works on the practice of medicine in relation to the cause of Bright's disease, arterio-sclerosis, angina pectoris and other maladies involving the heart and blood vessels, indicate that the death rate from these diseases during the past 30 or 40 years has kept even pace with the increase in the use of tobacco.

The London Lancet attributes the toxicity of tobacco smoke to poisonous products other than nicotine evolved in the process of smoking, notably to carbon-monoxide gas, one pint to four pints of which are given off by one ounce of tobacco smoked in the form of cigarettes, and two and one-half pints by a single pipe of tobacco. When we remember that two-tenths of one per cent. of carbon monoxide mixed with air has proved fatal to animals, and four-tenths of one per cent. has destroyed human life, we need no longer marvel that habitual smokers succumb to unexpected attacks of disease in far greater proportion than non-smokers. Where one smoker survives to a good old age, thousands of death certificates should read, "Resistance reduced by smoking."

Some results of observations, published by the Russian National Health Society, throw light on the effect of smoking on the health of boys and young men. The average number of cigarettes smoked daily by the medical and technological students of St. Petersburg was 21.26. Of these students, 16 per cent. were found to be suffering from some disease of the respiratory tract, while but 10.7 per cent. of non-smokers among them were thus affected. As to diseases of the alimentary tract, the proportions were about 12 per cent. of smokers to 10 per cent. of non-smokers. Where both tracts combined were found diseased in one individual, the proportions were 8.77 per cent. of smokers to 3.22 per cent. of non-smokers.

Those young men who had acquired the cigarette habit before the age of 16 years gave higher percentages of illness than those who had begun at or after that age.

At Yale University, Dr. J. W. Seaver gives the following results of tobacco tests among the students:

Non-smokers during the four years of college life gained, in height, weight and chest measurement, 18 per cent. more than regular smokers, and 12 per cent. more than irregular smokers.

In actual lung capacity, and this fact is very significant, the non-smokers gained 50 per cent. over regular smokers, and 35 per cent. over irregular smokers.

In regard to the effects of smoking on the nervous system, Dr. J. Leonard Corning, the eminent nerve specialist of this city, declared that tobacco smoking causes nervousness, dyspepsia, tremulousness, listlessness, a distaste for work and a difficulty in concentrating attention upon a task when once it has been begun. He relates this habit also to arterio-sclerosis, and even to insanity.

Dr. Corning further states that users of cigar holders and cigarette holders escape to a certain degree the direct absorption of poisonous products through the mucous membranes coming in contact with the tobacco. In France, where the Government has a monopoly of the manufacture and sale of tobacco, a variety of pipe and cigarette tobacco has been prepared from which the nicotine is extracted by a special process. An infusion of this denatured tobacco was injected into the veins of a rabbit with no apparent effect upon its arteries. Whereas an injection of ordinary tobacco infusion into another rabbit produced large areas of sclerosis in the aorta, from which the rabbit died in a few weeks.

To determine the primary effect of tobacco upon the vaso-motor system, and through it upon systemic circulation, let any man time his pulse just before smoking a strong cigar, and after smoking it time it again. The accelerated action will be clearly demonstrated, and the effect of driving an already enfeebled heart to thus work overtime, by beating with increased frequency, may readily be understood.

Eighty per cent. of applicants for admission to army service, both in England and in the United States, were rejected as unfit owing to what is known as "tobacco heart." This is appalling, for if three-fourths of our young men are unfit for army service, they are certainly unfit to assume the responsibilities of progenators of a fit race. So says Dr. Kress of Washington, D. C.

It is well established that the narcotic poison of tobacco not only tends to produce hardening of the arteries, but also what is known as glandular degeneracy. The offspring of tobacco users commonly show signs of this degeneracy, and these signs become more marked in succeeding generations if the habit is continued. Dr. J. H. Kellogg says that in his opinion the tobacco habit is the worst vice of civilization. The great English surgeon, Dr. Abernethy, declared that tobacco stupefies the moral sense. Dr. Keeley states that tobacco enfeebles digestion, produces emaciation and general debility; it lays the foundation for nearly every nervous disorder now common to the American people; it produces color blindness, partial or total loss of vision, various forms of insanity, epilepsy, bronchitis, rheumatism and asthma, dyspepsia and catarrh, tobacco heart and cancer of the stomach.

Dr. George Critchett, a distinguished London oculist, says he is constantly consulted for blindness occasioned solely by great smoking.

Dr. Woodward of the Massachusetts Insane Asylum reports as follows: "That tobacco produces insanity, I am fully confident."

Dr. Nathan Allen of Lowell, Mass., gives this evidence: "Tobacco perverts the taste, impairs mental capacity, corrupts the moral sense and stimulates the animal nature; its dreadful evils, through the law of inheritence, extend to offspring even to the second, third and fourth generation."

Dr. O. M. Stone of Boston declares: "A tobacco user's chances of recovery from malignant diseases is lessened 50 per cent."

Dr. Cowan gives it as his belief that next to transmitted tendencies, the use of tobacco is the great cause of both moderate and excessive alcohol drinking.

Dr. Willard Parker concurs in this testimony, with many others prominent in the medical profession.

The professors in the University of Michigan, who have had a long experience among thousands of young men, regard tobacco as having a worse effect than even liquor, affirming that more young men break down in body and mind, and finally go astray as a result of smoking, than of drinking, while the former often leads to the latter.

Cigarettes have clearly the most to answer for, in the opinion of competent judges. A superintendent of city schools in the Middle West brings a severe charge against them: "The effect of the cigarette is greatly injurious to the body, deranging the stomach, reducing the vitality, unsettling and weakening the nerves, causing palpitation of the heart, checking the growth. It injures the mind, dulling the powers of observation and reflection, producing a weak and treacherous memory, benumbing the sensibilities, always destroying the finer feelings, and greatly enfeebling the will. It injures the morals, tending distinctly to make a boy untruthful, and in many instances these boys become petty thieves."

The Supreme Court of Tennessee, in declaring the law constitutional which forbids the sale or giving away of cigarettes in that State, said: "We think cigarettes are not legitimate articles of commerce, because they are wholly noxious and deleterious to health. Their use is always harmful, never beneficial. They possess no virtue, but are inherently bad, and bad only. Beyond question their every tendency is toward the impairment of physical health and vigor.'"

Two prominent witnesses from Europe will serve to conclude the present article, by way of summing up.

The president of the Paris Medical Academy, M. Orfila, declares that tobacco is the most subtle poison known to the chemist, except the deadly prussic acid.

And Professor G. von Bunge of the University of Basel, after characterizing chronic nicotine poisoning as one of the causes of severe illness and as a source of degeneration, speaks of the tremendous economic waste which exhausts great areas of fertile soil in producing narcotic poison, and says: "The real reason of all this disgusting slavery to smoking is simply thoughtless imitation," worthy of monkeys, not of men.

SYMPTOMATIC EFFECTS OF TOBACCO USING.

T. D. CROTHERS, M. D.,
SUPERINTENDENT OF WALNUT LODGE HOSPITAL.
Hartford, Conn.

The effects of smoking on boys and young men have been matters of observation and study for a great many years. I have sought to find evidence that would verify or disprove some of the extravagant literature concerning tobacco.

There are several symptoms which are unmistakable, and will be found in a large proportion of boys and young men who smoke. Of these, tics and palsies of the lips, eyes and muscles of the face are common.

There is pallor and anemia associated with it. I have found faults of sight and hearing that were measurable, and sensory changes of touch, taste and smell which could be observed from day to day, and were particularly noticable after the use of strong cigars or cigarettes.

In many instances I have verified this fact, that sensory activities were affected, noticeable in slowness and reaction to impressions; also inaccuracy of statements. The consciousness of truth seems to be blurred. Minute statements and accuracy of details is considerably altered after smoking.

Events cannot be described exactly in the same way as they would be before. Of course there are wide variations in this, but these occur so frequently as to confirm the recognized fact that the physiological action of tobacco is a depressant to the nerve force and senses.

The tension is always higher after the use of tobacco, and then is lowered, and this fact alone is very significant. To a great many persons there is much confusion and ignorance as to what degree of depression tobacco may have on vitality.

The effort to draw dividing lines and say that tobacco is safe up to a certain point in some persons, and beyond that in excessive quantities it is a veritable poison, is always a failure. The extreme poisonous effects of tobacco have a beginning and growth and development, the same as any other toxins. There can be no question that cigarette smoking is a most perilous of all forms of tobacco. The principal reason is that the products of combustion are drawn directly to the mouth and absorbed, and while the quantity is small, the effects are accumulative.

Experience and observation are united in this conclusion that the cigarette smoker is the most degenerate and palsied of all users of tobacco. Some laboratory experiments show conclusively that tobacco contains aldehyde and other substances which are exceedingly dangerous when introduced into the system, and the anamoly of finding one man very seriously affected from smoking and another scarcely injured by it, affords no criterion from which to judge.

My conclusions, based on the study of a very large number of persons, are that the effects of smoking on young men and boys are decidedly injurious and dangerous in the long run. In this I have seen no exceptions.

SMOKING IS DETRIMENTAL.

WILLIAM G. ANDERSON. DR. P.H., M.D.
PROFESSOR AND DIRECTOR OF THE YALE UNIVERSITY GYMNASIUM.
New Haven, Conn.

I made an investigation some time ago to learn the effects of smoking upon a freshman class in Yale, and I can do no better for the purpose of this most helpful symposium for THE MEDICAL TIMES than use the figures I compiled at that time. Out of 389 members of the class of 1909, there were 148 smokers. Of these, 120 gave the following data as to the kind of smoking:

Pipe only	35
Cigarettes only	7
Cigars and cigarettes only	2
Pipe and cigars only	5
Pipe and cigarettes only	47
Pipe, cigars and cigarettes	17
Sworn off, but smoked in prep. school	7
	120

Of the 120 men, 110 smoked in their preparatory schools. Fifty-eight schools were represented by the smokers. The average height of the entire class was 68 inches; the average weight, 138 pounds; the lung capacity, 268 inches, and the strength test, 2,400 units. A further study of the men who were above and below the average of the class showed that fifty-five of the smokers were above the average strength test, fifty-four below; sixty-seven were above the average height, fifty-one below; fifty-four were above the average weight, sixty-four below; forty-seven are above in lung capacity, seventy-one below. That is, over half of the smokers are above the average in strength and height; considerably more than half are below in weight and lung capacity.

Dr. J. W. Seaver, who made careful observations along this line, found smokers deficient in height and lung capacity. The smokers in the class of 1909, who were noticeably above the average records of their class, were athletes, football players and gymnasts; they were select men, with good bodies and more than usual strength. It would be interesting to know what their records would have been if they had not been smokers.

A study of "Academic standing" shows that, out of 112 cases, thirty-five smokers were above the average standing of the class, which average, 2.68, was based upon three sets of examinations taken during the year, seventy-six were below and one man equaled the average. One hundred and twelve of the smokers took these examinations; the other six did not finish their course.

Of the 221 non-smokers who took the three examinations, one hundred and one fell below the average, one hundred and nineteen were above, and one man equaled the average.

Students who make an average of 3.30 out of a possible 4.00 are in the honor class, known as Philosophical Orations; those who make 3.15 receive High Orations, and those who make between 3.00 and 3.15 receive Orations. Men above the 3.14 mark are eligible to Phi Beta Kappa. It is probably understood that, to receive the honors mentioned, men must maintain these standards during their college course. Of the one hundred and twelve smokers, five made over 3.15, of which number one made 3.30 and one 3.23; six men made marks between 3.00 and 3.15. Of the two hundred and twenty-one non-smokers, seventeen made 3.30, forty-six made 3.15 and seventeen made between 3.00 and 3.15.

Of the 148 smokers whose hearts were examined, 19 showed irregularity, and were classified as follows: Irritable, 5; irregular, 7; weak, 2; regurgitation, 5. Of the 241 non-smokers whose heart condition is recorded, 66 were slightly abnormal, and were thus classified: Irritable, 22; irregular, 27; weak, 7; regurgitation, 10. Of the 148 smokers, 12.83% showed heart uncertainty. Of the 241 non-smokers, 27.38%. It is possible that the smoking may have exerted some influence on the heart, but how shall we dispose of the heart of the student who never touches tobacco?

A comparison of the statistics of the smokers, with these averages shows the number of smokers above or below the average as follows:

	Above Average.	Below Average.
Smokers (112)	31.1%	67.8%
Non-smokers (221)	45.7%	53.8%

The investigation of the heart of the smoker was not made to defend the freshman, but to approximate facts relative to his habit of using smoking tobacco. Much has been written against cigarette smoking, and much harm, and that the cigarette smoker suffers much from that it is the excessive use of tobacco that does great harm, and that the cigarette smoker suffers much from associate evils. A few conclusions are deduced. The 1909 man was a pipe and not a cigarette smoker. He smoked cigarettes on the streets because the use of a pipe by him is tabooed. This custom gives him the reputation of being a cigarette smoker. His health and heart are not injured to the extent generally believed, but his lung capacity is deficient and his weight is below the average. It is the concensus of opinion among most athletes that smoking is detrimental, and the majority of men training for teams do not use tobacco. And, finally, "Academic standing" of the smoker is lower than that of the non-smoker.

NO SMOKING UNDER 21.

GRANTLAND RICE, A. B.,
SPORTING EDITOR OF THE EVENING MAIL.
New York.

Smoking, in athletics, certainly has a very harmful effect on a boy. It cuts into his condition, makes him inclined to be short-winded and takes away energy and vitality.

For a young man over 21, who has lived cleanly up to that period, I do not consider moderate smoking harmful. Theoretically, any sort of smoking should be harmful in athletics, but, in fact, it is hard to prove such a case.

Smoking is supposed to be hard upon the nerves. It is so in my own case. Yet I know of no game that requires steadier nerves or better nerve control than golf. The best natural golfer in America is Charles Evans of Chicago. He doesn't smoke nor drink. Yet the only weak spot in his play is nervousness on the greens. The four steadiest and most effective golfers I know are Travers, Ouimet, Hilton and Travis—all champions now except Travis, who has won for several years in the past. And all four are hard smokers. The first three smoke cigarettes—the latter long, black cigars.

Mathewson, the steadiest pitcher in baseball, smokes cigars. Most ball players smoke, without showing any bad effects.

But I explain that in this fashion—after a man passes the buoyancy and natural elasticity of youth, he has a tendency, through a long siege of training and work in athletics, to become stale. If he attains too keen a training edge it brings his nerves too close to the sur-

face. He needs something to settle these nerves. A man cannot get into any fine condition and hold this indefinitely. He will crack if he attempts it. He must ease up somewhere along the way.

"Form" is best explained by some one as "the short interval between getting ready and going stale." To reach the very crest for one brilliant achievement I should say that smoking and all such should be eliminated. But over the long grind it is a different case. I would like to say that all smoking is injurious. But I doubt it in those who have passed the natural resourcefulness of youth. These can only stand so much hard training. If they play baseball seven months on a stretch or golf eight months on a stretch they must indulge in something to break this strain upon their nerves.

I have the cases before me of Gibson of Pittsburgh and McLean of Cincinnati and New York. Both started about the same time in the big league as catchers. Both were big, powerful men. Gibson neither smoked nor drank. He kept perfect training. McLean both smoked and drank, not steadily in his drinking but in spots. In theory Gibson should outlast him. But he broke under the strain of maintaining too keen an edge while McLean did not. Gibson rose to greater heights for two seasons. But he was the first to slip for McLean had never reached the taut point of condition.

English teams in training smoke pipes and take their Scotch and soda in moderation. And they are good on the long distance running game.

I do not think there is any question but that smoking is bad athletically for a boy under 21 years of age. He needs no nerve-soother. He has no nerves to soothe. But beyond this smoking in moderation is not likely to hurt an older man.

THE EFFECTS OF TOBACCO ON BOYS.

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MEDICAL DIRECTOR, COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK.
New York.

Twenty-four years' experience in teaching hygiene and physical education to boys and young men has convinced me that tobacco is injurious to growing youths. The class of boys and young men coming under my observation includes very few who begin smoking before the age of sixteen or who smoke excessively.

The effects produced by the use of tobacco vary over wide limits according to the individual's temperament, the age when he begins smoking, and the quantity of tobacco consumed. It is difficult in many cases to determine accurately the effects produced by tobacco because such factors as lack of exercise, insufficient sleep, and abuse of coffee, tea and other drugs are often present in individuals who use tobacco.

The effects which may be attributed at least in part to the use of tobacco by adolescents are: rapid and irregular pulse (100-120); poor circulation, manifested by pallor of skin and cold extremities; poor "wind" and lack of endurance; nervousness and irritability. These abnormal conditions are most marked in youths who are of a nervous temperament, lead an unhygienic life, and use much tobacco. Some cases have come under my observation where the excessive use of tobacco was undoubtedly the chief cause in producing unfavorable symptoms. This was proved by the rapid and marked improvement which took place when the use of tobacco was discontinued. One case, a boy 18 years old, smoked 25 to 30 cigarettes a day; his pulse was 128 and irregular; he was a candidate for pitcher on the baseball nine, but found that nervousness, irritability, and lack of endurance interfered seriously with his efforts to win a place on the team. After three weeks of total abstinence from tobacco, his pulse was 90 and regular, he improved rapidly in steadiness, control and endurance, and won the coveted place on the team. Many similar cases could be cited to show that tobacco is injurious to growing youths and to prove the contention that no efforts should be spared to influence boys and young men to abstain from its use.

SMOKING TO THE BOY SPELLS WORTHLESSNESS.

CHARLES B. TOWNS,
SUPERINTENDENT OF THE TOWNS HOSPITAL,
New York.

Tobacco has no greater foe than I. I view the subject from the standpoint of a man who was born and raised in the South, where every boy was expected to smoke, "chaw" and "cuss" some as soon as his parents thought he was old enough to do so.

Very fortunate for boys who came along about my time, '62, there were no cigarettes. I was brought up on a farm, and my first smoking of tobacco was behind a barn—keeping out of sight of the elders. Had I been raised in this age in a big city, I unquestionably would have smoked cigarettes, for a time at least, until I was able of my own accord to learn that the use of tobacco is bad business.

I voluntarily gave up tobacco twenty years ago, in disgust! I have never wanted to smoke since, and have always felt sorry for those who did.

There is nothing done at the present time to give the boys and young men of this age the right mental attitude about the use of this drug.

We must class the tobacco user as a whole among the most selfish of the animal kingdom. He thinks that his family should tolerate his smoking as often and as long as he pleases. that he should have a perfect right in private and public places, to use it irrespective of others feelings.

Tobacco, directly and indirectly, is the biggest possible factor in bringing about the boy's undoing. He must submit to his father's using it in his presence as he is growing up, and is told that he must not use it. We all know what this means sooner or later, and generally it is sooner.

The boy who begins smoking never does so in his parents' presence, nor with their consent. The boy beginning to use tobacco these days, begins with the worst form possible—cigarettes; as he must conceal his smoking it means he must begin to lie and this in the end will lead up to the boy's undoing.

The boy that will lie to his father about tobacco will lie about anything. He immediately cultivates that class of boys who are doing the same thing. We all know that with the fewest possible exceptions such boys are not looking for the clean things in life, nor discussing clean people and clean things. Not only is it the beginning of a systematic poisoning of the physical man, but it means a distortion of the moral man. In a short time you can begin to add gambling, loose morals, drinking and everything else that is not worth while, and which, sooner or later, spells *"worthlessness."*

Materia medica tells us that nicotine, next to prussic acid, is the most powerful poison known to medicine. The only medical use that it can really be put to is to

produce nausea; there are other drugs very much more desirable to meet such a condition.

Tobacco is harmful to every one who uses it, old or young. It cannot in any way contribute to anyone's physical or mental uplift. Some men are not so susceptible to the action of this drug as others; some are more economical in its use, and in the way in which they use it.

The reason that some men who have been using it for years apparently are in good health is that they are just a little harder to poison than others. The use of tobacco in any form is a useless, stinking, dirty and injurious habit, and should be classed as the *world's worst form of drug habit*. It is more surely contributing to the degeneracy to the race than alcohol or opium! I believe that if we could eliminate the use of tobacco, we would lessen the excessive use of alcoholic stimulants 75%.

I hope some day to see nation-wide legislation which will compel the teaching to the young in public and private schools what tobacco, stimulants and drugs really are, and their action upon the human system. It should be made part of the school curriculum. If boys really knew what tobacco is, and what its effect would be on their health in the future, they would not want to use it.

Let us start out and give the boy an honest chance. Sooner or later the old tobacco-soaked individual will pass away. We must look to the new crop of youngsters for any real reform in this direction.

SMOKING INCOMPATIBLE WITH EFFICIENT NERVOUS SYSTEM.

DUDLEY B. REED, M. D.
MEDICAL EXAMINER OF THE UNIVERSITY OF CHICAGO.
Chicago.

A considerable number of boys and young men are apparently unfavorably affected by smoking. In my experience the pernicious effects seem to be chiefly noticeable on the nervous system, and manifest themselves in an increased irritability of the nervous system and heart, and a decreased power of continued mental concentration.

Not infrequently a young man calls, complaining of difficulty in going to sleep at night, inability to study effectively, and, perhaps, of "nervousness." Examination may reveal tremor of tongue and fingers and a pulse rate of 90 or more, with a marked acceleration of the heart rate upon moderate exercise (hopping forty feet is used here), and a slow return to the original rate after the exercise. Questioning elicits the information that he is smoking five or six cigars a day, or more probably; a dozen pipefuls or two or three boxes of cigarettes.

If such a young man, continuing his regular regimen with the exception of tobacco, finds himself sleeping and studying better, and if the objective evidences of undue nervous irritability are much less marked after two weeks or a month, it is a fair inference that smoking was a cause of his condition. If, after two or three months of abstinence, a renewal of the smoking is followed by a recurrence of the previous symptoms, the inference is further justified.

There are other symptoms referable perhaps to the eyes or the stomach, which one may be inclined to attribute to smoking in college men, but the type of case outlined above has come to my attention most often, often enough to lead me to believe that in many young men habitual smoking is incompatible with a thoroughly efficient nervous system and maximum mental output.

TOBACCO IS INJURIOUS TO BOYS.

HARRY L. HILLMAN,
DIRECTOR OF ATHLETICS IN DARTMOUTH COLLEGE.
Hanover, N. H.

Smoking is certainly harmful to boys and young men. Athletic sports are the best means of finding this out. An athlete who uses tobacco is very apt to injure his heart and usually the blame is labeled "athletics."

A tobacco user lacks energy, his training is hard work rather than a pleasure, his digestion is not what it should be, he is unreliable in competition or in a pinch, he cannot recuperate rapidly after a hard struggle and he does not repeat as readily as one who does not use tobacco. Invariably a smoker thinks he can run a 100-yard dash, a mile run or any other distance and do as well as a non-smoker. He will perhaps for a number of times but the double strain of the use of tobacco and strenuous exercise is likely to permanently injure the heart action.

It is rather a difficult proposition to explain these things to a young fellow; but if we could tell him the same thing ten years later or after he has learned from experience he would undoubtedly agree with us.

SMOKING AFFECTS THE HEART.

MICHAEL J. DONOVAN.
FOR THIRTY YEARS ATHLETIC DIRECTOR, NEW YORK ATHLETIC CLUB.
New York.

I consider a man is very much better off physically if he does not smoke. It goes without saying that a boy or young man, who has not attained his full growth, should never consider smoking. I cannot give better advice to anyone than I do to my own son, to whom I have already said, "Don't smoke and don't drink and your battle is half won." When it comes to an adult, if he feels he must smoke, he will find pipe smoking the least harmful. The cigar comes next, and the cigarette is a very poor third, because it is most injurious. This is due to the fact that cigarette smoke is inhaled. I do not consider that smoking affects the wind, but it does affect the heart and nerves.

One reason why business men are so often in bad physical form is that they smoke to excess. If a boy or young man expects to amount to anything in athletics, he must let smoking and all kinds of liquor alone. They are rank poison to his athletic ambitions.

A LAW AGAINST SMOKING BY BOYS.

NATHAN P. STAUFFER, M. D.,
SOMETIME PROFESSOR OF HYGIENE IN DICKINSON COLLEGE, AND HEAD COACH OF THE UNIVERSITY OF PENNSYLVANIA BASEBALL TEAM; MEMBER OF THE EXECUTIVE COMMITTEE NATIONAL COLLEGIATE ASSOCIATION, ETC.
Philadelphia, Pa.

Smoking positively effects young boys and men injuriously. Smoking irritates the nervous centers, which over-stimulates the whole nervous system, accelerates the heart, thus tiring it, and when the supreme test of the race comes it cannot stand the strain and the competitor falters and loses what he most desires to gain. I believe a law should be passed prohibiting young men under 21 years of age from smoking; by that time they have attained their growth and if they desire to run the risk of ruining their health after 21 years it is their affair. In over fifteen years of experience and contact with athletes, I have come to the conclusion that to excel one must follow the strict rules of training, abstinence from smoking, drinking, gambling, overeating, sexual excesses and late hours.

TOBACCO HAS A DEFINITELY BAD EFFECT.

JOSEPH E. RAYCROFT, M. D.,
PROFESSOR OF HYGIENE AND PHYSICAL EDUCATION IN PRINCETON UNIVERSITY.
Princeton, N. J.

I am satisfied that the habitual use of tobacco does have a definitely bad effect upon the majority of growing boys and on many adults. The kind and amount of damage that is done varies in each case, depending upon individual differences in temperament, physiological tolerance, and extent of the habit.

The campaigns against the use of tobacco in various forms have been based too largely upon general observation and too little upon the results of careful and reliable investigations. Such investigations are greatly needed as a basis for a sane educational campaign.

If your symposium results in the collection of such material you will have done a great service.

SMOKING IS DETRIMENTAL.

WALTER CAMP, A. B.,
OF ATHLETIC COUNSEL TO YALE UNIVERSITY,
New Haven, Conn.

Smoking is detrimental to young boys from an athletic standpoint.

Anti-Cigarette League of America.

The first annual conference of the Anti-Cigarette League of America, Eastern Division, for race conservation, will be held at Lake Mohonk, June 2, 3 and 4. The habitual use of tobacco in some form has reached a large portion of boys and young men, even some girls and women. This is reported among grade school boys up to a maximum of 90 per cent., and among subnormal types 100 per cent. is common. This habit injures not only the present, but future, generations, because it reduces the birth rate, prevents normal development of body, mind and character. Not only does it postpone the production of higher types of men and women, but it robs us of present standards.

Athletics, child welfare, education, efficiency, economics, eugenics, hygienics, industry, longevity, sanity, sociology and many other subjects are vitally involved in the use of cigarettes and other more abundant, if less poisonous, forms of nicotine products. The nicotine habit, so closely related to the alcohol habit, gives the friends of humanity one of its most vital and serious problems. Mansfield P. Welcher, of 23 West Ninth Street, New York, is the field secretary.

Primary Sarcoma of Lip.

A. J. Markley, Denver, reports a case of primary round-cell sarcoma of the lower lip, which, according to Professor W. H. Welch, who confirmed the diagnosis, is exceedingly rare, though lymphangiomas with sometimes sarcomatous structure are not uncommon in that situation. The clinical diagnosis without operation in such a case as the one reported is very difficult but still very important, as the rapid growth and the widespread metastases of sarcoma make it specially perilous. Hence biopsy should be the rule in such cases, whenever the clinical manifestations are not so clear as to be unmistakable. About six months after the removal of the growth a nodule appeared at the anterior borders of the sternomastoid, which was removed, but unfortunately lost before examination. There has been no subsequent relapse up to the date of reporting, a period of five or six months.—(*J. A. M. A.*)

General Scientific

SHOES FOR ALL PEOPLE BY PRESCRIPTION

WILLIAM W. RENO, A.M., M.D.
MAJOR, MEDICAL CORPS, UNITED STATES ARMY,
Fort D. A. Russell, Wyo.

Barefoot and sandal wearing races are notoriously better marchers than shoe-wearing peoples. History is full of testimony of this fact. To quote from Butler, "Whenever shoe-wearing people are matched against shoeless people in marching the barefooted people show superiority." It seems that one of the penalties of civilization is decreased marching and walking power. And one of the principal causes of this is not hard to find. A shoe limits the freedom of the foot and in time causes atrophy of certain foot muscles.

The normal foot is very flexible. Great freedom of action is needed in walking, running, jumping and climbing. The large joints of the foot must not be confined. The grasp of the toes against the ground, and the backward push of the great toe are of value at every step. The longitudinal and transverse arches must be free to contract or expand with every variation in the load.

But the shoe has overwhelming advantages and is a necessary adjunct to civilization. After all, the great disadvantage of the shoe in walking or marching is not so much from the fact that it is a shoe but that from childhood to old age the average person does not wear properly fitting shoes. His feet have become so deformed and so far removed from nature that great walking or marching capacity is a physical impossibility. Fashion rules the foot as it does the woman's waist, and while it encases one in an unnatural vice of whalebone and steel, it encloses the foot in a leather covering that seldom fits. Modern society regards the small and narrow foot as beautiful. But if society could see the corns, ingrowing nails, bunions, hammer toes, and generally deformed feet that small shoes conceal, the styles would quickly change.

At the present time the fashionable shoe is an attractive one, almost correct in shape, and a great improvement over anything heretofore placed on the market. This excellent shoe, however, is no doubt ephemeral. It will disappear as soon as a new style arrives, as the demand for it is not based upon its excellent lines, but upon the fact that it is now *a la mode*.

The following extracts from letters from prominent shoe manufacturers explain the situation very clearly:

No. 1. "The man who will buy purely anatomical shoes is the man who has arrived at years of maturity and discretion, but he is not the fellow who creates volume in shoe manufacturing. The follow we have to cater to to-day is the young man who buys a pair of shoes because they are the latest thing, who will wear them a couple of months until they are a bit shabby, and then buy another pair.

"The dictates of fashion in this respect run in waves, and we find that in going after the faddish stuff we have to change the type of our lasts about every six months and the patterns to match.

"As the average profit to the manufacturer to-day in men's shoes that retail at $3.50 and $4 is not over 5 cents per pair, you can readily see that he has got to get a big volume in order to make a decent profit."

No. 2. "The difficulty, however, in building shoes along anatomical lines is not usually a difficulty of manufacture, and is not due to the manufacturers not knowing what constitutes at least some of the principles of anatomical footwear, but it has been amply proven in our case that the public does not want, at least in any great numbers, shoes so made.

"To be successful in the shoe manufacturing game you have got to give the public what they want, and not what you think they ought to have. Years ago we tried to give them a line of anatomically constructed shoes, built of good materials, and in the winter weights practically waterproof, at a price that

ranged in those days about half a dollar more a pair than the ordinary kind. But life is too short and our capital too soon expended to educate the public against its will. We are all in business primarily for what we can make out of it, otherwise we are missionaries or perhaps doctors, seeking the way in which we could do the most good for humanity.

"I was forcefully impressed one day with a parallel another business man drew for me. He says, 'A school teacher is giving the public what it ought to have—a first-class actor is giving it what it wants.' Draw for yourself the conclusion as to who is making the most money.

"We quit making an anatomical shoe, and have been giving them for the last six or seven years whatever they wanted, no matter how monstrous the shape. Take for instance the style in our catalogue marked 1145 and 1163, the most extreme and radical of fad fashion. It is nothing but ridiculous when viewed from a rational standpoint. Nevertheless we have not been able to make anywhere near enough shoes for these styles this season to meet the demand."

These extracts show clearly why the feet of American people are deformed, and why they will continue to be deformed. There is no especial demand for correct footwear. That this foot deformity is however enormous—almost beyond belief—is evidenced by the following statistics: The feet of 2,413 adult males were carefully measured. These measurements were compared to the measurements of the shoes worn, in order to determine whether the shoes fitted the feet. All corns, ingrowing nails, deformed toes, etc., were carefully noted. These results are appalling. The details of this examination, which extended over a period of five years, are as follows:

TABLE No. 1.—Shoes worn; correct length and width.

Number of cases 396. Even of the 396 men wearing properly fitting footwear, 191 of them exhibited foot injury. This injury was no doubt due to ill fitting shoes worn at some time previous to the examination. Good feet, 205; good feet, corns, 28; good feet, corns, ingrowing nails, 1; good feet, toes jammed or crowded, 2; good feet, corns, toes jammed or crowded, 1; good feet, ingrowing nails, 9; good feet, bunion, 2; corns, 77; corns and toes crowded, 16; corns and ingrowing nails, 9; corns, toes jammed or crowded, hammer toe, 6; toes jammed or crowded, 10; corns and bunions, 4; corns, toes jammed or crowded, ingrowing nails, 5; toes jammed or crowded, ingrowing nails, 3; ingrowing nails, 8; deformed nails, 5; constricted by tight instep, 4; hammer toe, 1; bunions, 4; corns, bunions and ingrowing nails, 1.

TABLE 2.—Correct width, too long.

Number of cases 45. Good feet, 7; good feet, toes jammed or crowded, 6; good feet, corns, 5; corns, 8; corns, toes jammed or crowded, 4; corns, toes jammed or crowded, ingrowing nail, 4; corns, toes jammed or crowded, hammertoe, 1; 1; toes jammed or crowded, 6; toes jammed or crowded, ingrowing nails, 1; ties jammed or crowded, deformed nails, 1; toes over riding, corns, 1; toes depressed, 1.

TABLE 3.—Shoes worn too narrow, too long.

Number of cases 49. Good feet, 16; good feet, corns, 1; corns, 12; corns, toes jammed or crowded, 10; corns, toes jammed or crowded, bunions, 1; corns and bunions, 1; corns, ingrowing nails, 1; ingrowing nails, 2; bunions, 2; toes jammed or crowded, 1; toes jammed or crowded, ingrowing nails, 1; nails deformed, 1.

TABLE 4.—Shoes worn too broad, too long.

Number of cases 24.—Good feet, 12; corns, 7; corns, toes jammed or crowded, 2; bunion, 1; ingrowing nails, 1; toes jammed or crowded, corns, hammer toe, 1.

TABLE 5.—Shoes worn correct length, too broad.

Number of cases 154. Good feet, 62; good feet, toes jamed or crowded, 4; good feet, corns, 8; corns, 17; corns, ingrowing nails, 5; toes jammed or crowded, 10; deformed nails, 1; constricted by too tight instep, 1; hammer toe, 1; toes jammed or crowded, ingrowing nails, 6; toes jammed or crowded, corns, 14; toes jammed or crowded, corns, toes over ride, 3; toes jammed or crowded, bunions, 2; corns, hammer toe, 16; bunions, 2; ingrowing nails, 1; great toe crooked, 1.

TABLE 6.—Shoes worn correct length, too narrow.

Number of cases 204.—Good feet, 45; good feet, toes jammed or crowded, 7; good feet, corns, nails deformed, 4; good feet, corns, 14; good feet, ingrowing nails, 3; corns, 24; corns, toes jammed or crowded, 18; corns, toes jammed or crowded, ingrowing nails, 19; corns, ingrowing nails, 7; corns, toes jammed or crowded, hammer toe, 2; corns and bunions, 2; toes jammed or crowded, 30; ingrowing nails, 6; toes jammed or crowded, ingrowing nails, 4; corns, constricted by too tight instep, 3; corns, hammer toe, 2; toes jammed or crowded, bunions, 12; bunions, 2.

TABLE 7.—Shoes worn correct width, too short.

Number of cases 508. Good feet, 22; good feet, corns, 7; good feet, toes jammed or crowded, 13; good feet, toes jammed or crowded, corns, 2; good feet, corns, nails deformed, 1; corns, 34; corns, toes jammed or crowded, 118; corns, toes jammed or crowded, bunions, 4; corns, toes jammed or crowded, ingrowing nails, 102; corns, ingrowing nails, 24; corns, toes jammed or crowded, hammer toe, 10; corns and bunions, 2; corns, ingrowing nails, bunions, 1; toes jammed or crowded, 86; toes jammed or crowded, ingrowing nails, 44; toes jammed or crowded, ingrowing nails, hammer toe, 1; bunions, 10; discomfort from too high instep, 2; discomfort from too low instep, 4; constricted by tight instep, 1; deformed nails, 7; hammer toes, 3; toes over riding, 9; toes mashed and over riding, 1.

TABLE 8.—Shoes worn too broad, too short.

Number of cases 774. Good feet, 44; good feet, toes jammed or crowded, 14; good feet, corns, 12; good feet, corns, ingrowing nails, 1; corns, 46; good feet, ingrowing nails, 3; corns, toes jammed or crowded, 245; corns, toes jammed or crowded, bunions, 5; corns, toes jammed or crowded, ingrowing nails, 137; corns, ingrowing nails, 16; corns, toes jammed or crowded, hammer toe, 12; corns, ingrowing nails, bunions, 2; toes jammed or crowded, ingrowing nails, 124; toes jammed or crowded, ingrowing nails hammer toe, 3; toes deformed, 2; hammer toes, 8; constricted by too tight instep, 6; nails deformed, 1; corns, toes over ride, 6; toes jammed or crowded, 47; toes jammed or crowded, nails deformed, corns, 38; toes over ride, 2.

TABLE 9.—Shoes worn too short, too narrow.

Number of cases 259. Good feet, 11; good feet, corns, 1; good feet, toes jammed or crowded, 3; good feet, toes jammed or crowded, ingrowing nails, 1; corns, 18; corns, toes jammed or crowded, 56; corns, toes jammed or crowded, ingrowing nails, 57; corns. toes jammed or crowded, bunions, 11; corns, ingrowing nails, 10; corns, toes jammed or crowded. hammer toe, 8; corns and bunions, 2; corns, ingrowing nails and bunions, 2; toes jammed or crowded, 20; toes jammed or crowded, ingrowing nails, 27; ingrowing nails, 5; toes jammed or crowded, bunions, 2; constricted by tight instep, 2; toes over ride, 4; bunions, 4; great toe crooked, 2; toes jammed or crowded, corns, deformed nails, 11; toes jammed or crowded, corns, ingrowing nails, toes over ride, 2.

Note.—In these tables corns and callosities have been included in the term corn. In many instances where the classification says toes jammed or crowded both conditions were present. By jammed is meant that the toes were crumpled upon themselves into a compact mass. By crowded, that they have not sufficient lateral freedom and are mashed into each other. Ingrowing nail may mean one or many. Such disabilities as flat foot and other foot ills not directly traceable to wearing ill fitting shoes have been omitted. Also such more or less transient lesions as congested areas of skin, pale and cold feet, marks of shoe pressure, etc.

These tables present a terrible arraignment of the condition of male adult's feet. Of the 2,413 men examined 2,017 were wearing shoes that did not fit their feet; 1,764 of them were wearing shoes either too narrow or too short or both.

It will be noticed that in table one the men wearing properly fitting shoes have as a rule good feet or slight deformity traceable to ill fitting shoes previously worn.

In tables two, three and four, as the shoes are too long, there is no great foot injury. Yet these shoes would cause trouble in walking or marching any considerable distance.

In table five the length is correct but the width is too great. If a shoe of correct length and width can not be secured, this shoe is the next one to be chosen, as it's only defect is that it permits too much lateral motion.

We now come to a bad shoe, one of correct length, but too narrow. See table six. This shoe binds the foot bones and muscles and prevents free foot action.

In tables seven, eight and nine the shoes are very bad, as all are too short and prevent the free action of the great longitudinal arch of the foot. These shoes produce a great variety of foot deformity. The worst shoe of the lot is that of table nine, too narrow and too short. The wearer of this shoe must of necessity have

his toes crumpled upon themselves, and the soles of the feet compressed into folds. The wearer of this shoe is continually walking upon wrinkles in his feet. In his case great walking capacity is wholly out of the question.

From a careful study of these tables one is almost led to believe that foot comfort is the last thing considered when shoes are selected. With the average woman this is certainly true, as her concern when buying a pair of shoes is not "How does it feel?" but "How does it look?"

The foot injury noted in the nine tables here presented, does not disclose all the damage incident to ill-fitting shoes. A type of foot injury far more serious than any noted is very prevalent. It is the crowding of the great toe out of its natural alignment or hallux valgus. This condition is caused when the shoe worn is not built upon a proper last. See Fig. 1. A shoe

Fig. I. *A, B* and *C* improper foot lasts; *D* is proper.

built upon lasts a, b or c will cause hallux valgus, even though its length and breadth is correct. No shoe should be worn unless it is built upon a last similar to d, a last that approaches the natural outlines of the foot.

The seriousness of hallux valgus must not be underestimated. This condition as surely reduces the capacity for walking or marching as night follows the day.

Figure 2 shows a foot with hallux valgus. The line drawn across is Meyer's line; so called after Dr. Hermann Meyer, the man first to formulate correct lines for footwear. In a normal foot the axis of the great toe falls in this line. Or as Meyer stated the condition, "The great toe must lie in such a position that its axis when carried backward shall pass through the centre of the heel."

In general terms the foot is a lever of the second class. The fulcrum is at the ball and great toe, the power at the heel—transmitted through the tendo-Achilles from the calf muscles—and the weight, the body is between. This lever is the prime factor in walking or marching. The leg and body muscles, except as mentioned, are concerned principally with balancing the load or shifting the levers, the feet. See Fig. 3. (a).

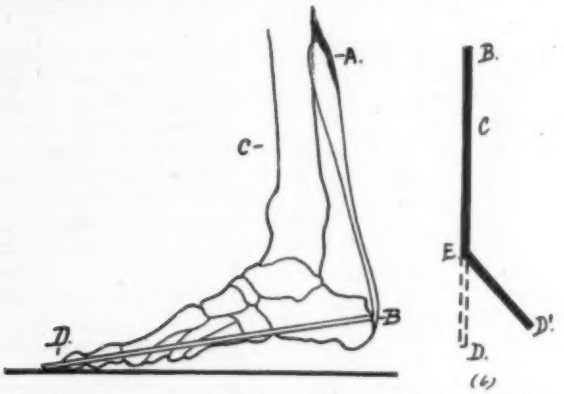


Fig. III. (*a*) A foot with hallux valgus, and (*b*) diagram of its leverage.

A foot with hallux valgus is a lever with a lateral bend at its fulcrum end. See Fig 3 (b). No workman would think of using such a lever as the loss of power would be tremendous. Why should anyone walk or march with such levers? In exactly the same proportion as the great toe is bent is the efficiency of the foot as a lever decreased and walking or marching capacity lessened.

Nor does this exhaust the serious disability of hallux

Fig. II. *X*-ray of a foot with hallux valgus.

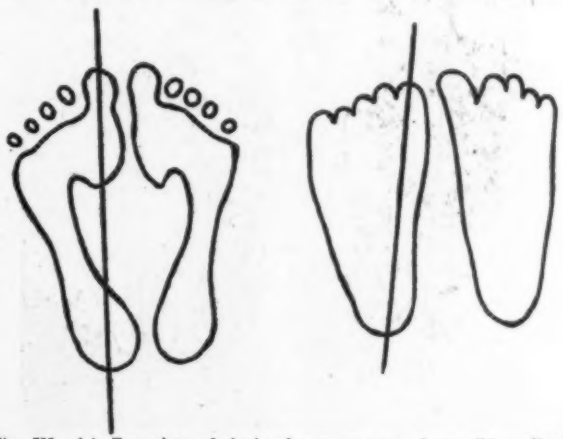


Fig. IV. (*a*) Footprints of Arab who never wore shoes; (*b*) outlines of baby's feet.

valgus. At every step as the foot leaves the ground the great toe by virtue of its intrinsic muscles and leg assistance gives a final backward push that is of material aid in propelling the body. The effectiveness of this backward push is greatly increased as the body is already falling forward for the next step when it is applied. The continual loss of power in the backward push caused by hallux valgus is a further potent factor in decreasing walking or marching power.

Fig. 4 presents the footprints of an Arab who never wore shoes. Also the outlines of a baby's feet. The feet of neither have been deformed by shoes. Note how Meyer's line and the axis of the great toe coincide.

Fig. 2 is an X-ray picture of the left foot of case No. 2124. This is a case of permanent hallux valgus. This person has worn shoes so widely removed from his proper size that the limit of flexibility was passed and permanent deformity produced.

The wearer of this shoe does not possess the walking power which is rightfully his portion. He has so deformed his feet by ill-fitting shoes that he loses leverage at every step. Of the 2,413 men examined, practically 90 per cent. of them had more or less hallux valgus.

Figs. 5 and 6 present a condition which is as serious, so far as walking or marching is concerned, as permanent hallux valgus. It is the wearing of shoes which cause temporary hallux valgus. In this case the shoes worn do not bend the great toes beyond their limits of flexibility, consequently when the feet are bare no hallux valgus is visible. Yet the shoes worn are of such incorrect shape that they bend the great toes from their natural alignment, and hold them in a temporay hallux valgus. For walking or marching temporary hallux valgus is as bad as the permanent variety, as the foot lever is broken in either case.

A simple test for permanent hallux valgus is as follows: Place the bare feet alongside each other. If they touch from the heel to the end of the great toe there is no hallux valgus. To test whether shoes cause hallux valgus: Place left and right shoes alongside. If they do not touch each other along their inner border from heel to toe they cause temporary hallux valgus. Also if they push the great toes beyond their limits of flexibility, permanent hallux valgus is the inevitable result.

Fig. V. Temporary hallux valgus.

Fig. VI. Temporary hallux valgus.

One of the worst features of ill-fitting shoes is that they produce bad indirect results that are far reaching. Among other things they cause a conscious or unconscious disinclination for proper physical exercise. It is not necessary to enumerate the host of evils that result from lack of proper exercise of the body.

Since the physical evils of ill-fitting shoes are so tremendous it becomes our manifest duty as physicians to modify them as much as possible. A campaign of education should be inaugurated which will rescue the foot from the domain of fashion, and place it in its proper sphere. Corns, bunions, ingrowing nails, hallux valgus, and other foot ills are totally unnecessary, and their prevention is most simple. If properly fitting shoes are worn from childhood until old age they will remain an unknown quantity.

The average person however does not know the proper sized shoe to wear. A life time habit of wearing shoes dictated by fashion has prevented the formation of proper judgment.

As promoters of the physical welfare of the people, it becomes the manifest duty of physicians to indicate what is proper footwear. In order to perform this duty intelligently, the physician must know something about foot and shoe measurements, proper shoe lasts, allowances for existing foot deformity, etc.

Foot measurement in itself is so simple that its rudiments can be mastered in ten minutes. All the paraphernalia necessary is a tape measure and a last maker's size stick. See Fig. 7.

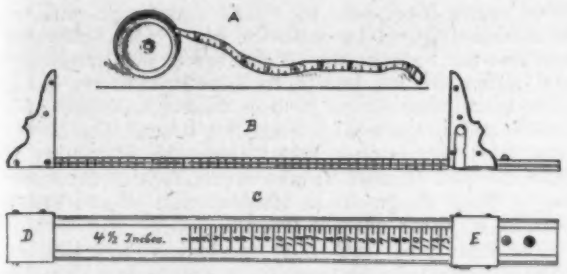


Fig. VII. Instruments for foot measurement, tape measure and last maker's size stick.

The size stick is nothing more than a rule numbered with shoe last sizes, having a stationary heel block and a movable toe block. This size stick is used for measuring the length of the foot. The heel of the bare foot is placed against the heel block, and the toe block is placed lightly against the toe projecting farthest—usually the great toe. The number at which the toe block stands is the shoe last size required for the foot measured. To this size two sizes must be added in order to determine the size in length of the shoe to be worn. For example, if the size stick shows that the foot is shoe last size 7, the length of the shoe to be worn is size 9. (It is no doubt clear why two sizes must be added to the last size. No foot can fit a shoe so snugly as a shoe last.)

Ordinarily but one other measurement is required in fitting shoes, the ball measurement. See Fig. 8. This measurement is the circumference of the foot in inches over the meta-tarso-phalangeal joints of the first and fifth toes.

In order to apply these measurements in the selection of shoes it is necessary to have at hand a table of standard shoe measurements.

The following measurements are standard for boys, youths and men. They are given for the instep, waist and ball. Usually the ball measurement alone is taken.

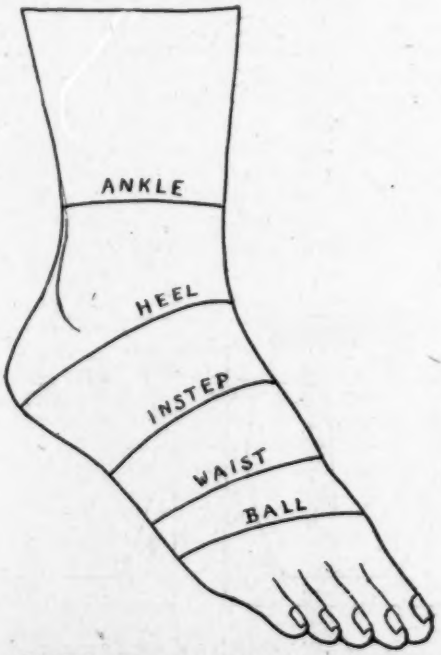


Fig. VIII. Points for taking measurements of foot.

In some cases the instep and waist measures are of value also.

STANDARD MEASUREMENTS.
MEN'S.

Sizes.		6	7	8	9	10	11
	Ins.	8 1/8	8 3/8	8 5/8	8 7/8	9 1/4	9 5/8
A.	W.	7 5/8	7 7/8	8 1/8	8 3/8	8 5/8	8 7/8
	B.	7 5/8	8	8 1/4	8 1/2	8 3/4	9
	Ins.	8 3/8	8 5/8	8 7/8	9 1/8	9 3/8	9 5/8
B.	W.	7 7/8	8 1/4	8 3/8	8 5/8	8 7/8	9 1/8
	B.	8	8 1/4	8 1/2	8 3/4	9	9 1/4
	Ins.	8 5/8	8 7/8	9 1/8	9 3/8	9 5/8	9 7/8
C.	W.	8 1/8	8 3/8	8 5/8	8 7/8	9 1/8	9 3/8
	B.	8 1/4	8 1/2	8 3/4	9	9 1/4	9 1/2
	Ins.	8 7/8	9 1/8	9 3/8	9 5/8	9 7/8	10 1/8
D.	W.	8 3/8	8 5/8	8 7/8	9 1/8	9 3/8	9 5/8
	B.	8 1/2	8 3/4	9	9 1/4	9 1/2	9 3/4
	Ins.	9 1/8	9 3/8	9 5/8	9 7/8	10 1/8	10 3/8
E.	W.	8 5/8	8 7/8	9 1/8	9 3/8	9 5/8	9 7/8
	B.	8 3/4	9	9 1/4	9 1/2	9 3/4	10
	Ins.	9 3/8	9 5/8	9 7/8	10 1/8	10 3/8	10
F.	W.	8 7/8	9 1/8	9 3/8	9 5/8	9 7/8	10 1/8
	B.	9	9 1/4	9 1/2	9 3/4	10	10 1/4

STANDARD MEASUREMENTS.
BOYS.

Sizes.		1	2	3	4	5
	Ins.	6 7/8	7 1/8	7 3/8	7 5/8	7 7/8
A.	W.	6 3/8	6 5/8	6 7/8	7 1/8	7 3/8
	B.	6 1/2	6 3/4	7	7 1/4	7 1/2
	Ins.	7 1/8	7 3/8	7 5/8	7 7/8	8 1/8
B.	W.	6 5/8	6 7/8	7 1/8	7 3/8	7 5/8
	B.	6 3/4	7	7 1/4	7 1/2	7 3/4
	Ins.	7 3/8	7 5/8	7 7/8	8 1/8	8 3/8
C.	W.	6 7/8	7 1/8	7 3/8	7 5/8	7 7/8
	B.	7	7 1/4	7 1/2	7 3/4	8
	Ins.	7 5/8	7 7/8	8 1/8	8 3/8	8 5/8
D.	W.	7 1/8	7 3/8	7 5/8	7 7/8	8 1/8
	B.	7 1/4	7 1/2	7 3/4	8	8 1/4
	Ins.	7 7/8	8 1/8	8 3/8	8 5/8	8 7/8
E.	W.	7 3/8	7 5/8	7 7/8	8 1/8	8 3/8
	B.	7 1/2	7 3/4	8	8 1/4	8 1/2
	Ins.	8 1/8	8 3/8	8 5/8	8 7/8	9 1/8
F.	W.	7 5/8	7 7/8	8 1/8	8 3/8	8 5/8
	B.	7 3/4	8	8 1/4	8 1/2	8 3/4

STANDARD MEASUREMENTS.
YOUTH'S.

Sizes.		8	9	10	11	12	13
	Ins.	5 9/16	5 3/4	5 15/16	6 1/4	6 3/8	6 5/8
A.	W.	5 3/16	5 3/8	5 9/16	5 3/4	6	6 1/4
	B.	5 5/16	5 1/2	5 11/16	5 7/8	6 1/4	6 3/8
	Ins.	5 13/16	6	6 3/16	6 3/8	6 5/8	6 7/8
B.	W.	5 7/16	5 5/8	5 13/16	6	6 1/4	6 1/2
	B.	5 9/16	5 3/4	5 15/16	6 1/4	6 3/8	6 5/8
	Ins.	6 1/16	6 1/4	6 7/16	6 5/8	6 7/8	7 1/8
C.	W.	5 11/16	5 7/8	6 1/16	6 1/4	6 1/2	6 3/4
	B.	5 13/16	6	6 3/16	6 3/8	6 5/8	6 7/8
	Ins.	6 5/16	6 1/2	6 11/16	6 7/8	7 1/4	7 3/8
D.	W.	5 15/16	6 1/4	6 5/16	6 1/2	6 3/4	7
	B.	6 1/16	6 1/4	6 7/16	6 5/8	6 7/8	7 1/8
	Ins.	6 9/16	6 3/4	6 15/16	7 1/4	7 3/8	7 5/8
E.	W.	6 3/16	6 3/8	6 9/16	6 3/4	7	7 1/4
	B.	6 5/16	6 1/2	6 11/16	6 7/8	7 1/4	7 3/8
	Ins.	6 13/16	7	7 3/16	7 3/8	7 5/8	7 7/8
F.	W.	6 7/16	6 5/8	6 13/16	7	7 1/4	7 1/2
	B.	6 9/16	6 3/4	6 15/16	7 1/8	7 3/8	7 5/8

From the following tabulation, standard sizes for women's, misses', children's and infants' shoes can readily be ascertained.

	Base size	Ball, inches	Waist	Instep	Button boots	Length limits	Girth difference between full sizes
Women's	4D	8	7 7/8	8 5/8	8 1/2	2 1/2 to 10	1/4 in.
Misses'	13D	7	6 3/4	7 3/8	7 1/2	11 to 2	1/4 in.
Children's	10D	6 5/16	6 3/16	5 11/16	6 3/4	8 to 10 1/2	3/16 in.
Infants'	7D	5 3/4	5 3/4	6 1/16	6 3/16	1 to 7 1/2	3/16 in.

Widths for Women, Misses and Children, AA-A-B-C-D-E-EE.

Shoes in these classes are fitted precisely as for men, youths, and boys, selecting of course shoes that are built upon lasts of proper shape.

Foot measurement is not an absolute guide to the proper shoe. In some cases the life-time habit of wearing ill-fitting shoes has caused such deformity that the feet do not conform to standard or any other measurements. In extreme instances it may be necessary to prescribe shoes built from special lasts. In such cases take the ball, waist and instep measurement but subtract 1/4 inch from each one, as the last is made smaller than the foot measure. Also add 3/4 inch to the length of the foot.

It will be surprising however what strange looking feet will find comfort in standard shoes, if the shoes are fitted by foot measurement. Theoretically you can measure feet and then order proper shoes. Practically feet are not so easily catalogued as corns, bunions, etc.,

often make another size imperative—at least for a time. If the shoe indicated by measurement is not satisfactory, try shoes a letter wider or narrower. The length is practically always correct. Shoes fitted by foot measurement nearly always seem too large when first worn. The foot has been cramped so long that it misses its accustomed prison. Such shoes, however, when worn for a while will prove so comfortable that, unless the desire for small appearing feet becomes paramount they will never be discarded.

The average physician pays but slight attention to the feet; and a corn is almost beneath his professional notice. As a result chiropodists and foot appliance men abound, and newspapers are well supplied with advertisements of arch supports, foot powders and corn plasters. Any pathological condition of the foot however trivial it may be merits the attention of the physician. Yet if the physician rescues the foot from its present bondage, as one requisite he must become an expert in fitting footwear by foot measurement.

COUNTRY HOME SEWAGE PLANT.

N. P. Brooks, M. D.,
New Lebanon, N. Y.

When I decided to place in my house, bath, toilet and kitchen sink, and a lavatory for my office, it seemed at first a simple matter to build a cesspool of openwork stone a short distance from the house, as I am located some way from any water supply except my own and as there is little likelihood of any buildings being erected in the neighborhood.

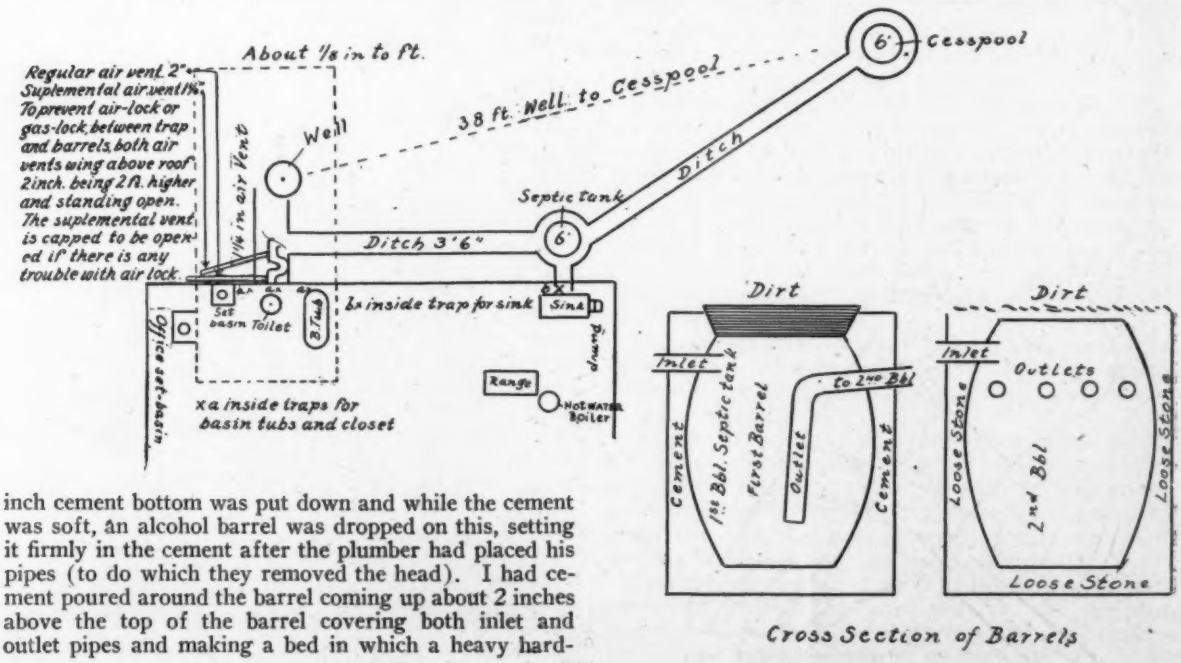
After studying surface conditions it seemed unwise to trust to a simple openwork cesspool, it being uncertain how wide a seam of water was tapped by my well and I was not positive that the dip would be away from the well. The only safe method seemed to establish a septic tank but the price was almost prohibitive. As the result of some planning I decided to utilize old alcohol or tar barrels.

At a point convenient for all drainage pipes from the house I had dug a pit 6 feet deep. A good 4½ inch cement bottom was put down and while the cement was soft, an alcohol barrel was dropped on this, setting it firmly in the cement after the plumber had placed his pipes (to do which they removed the head). I had cement poured around the barrel coming up about 2 inches above the top of the barrel covering both inlet and outlet pipes and making a bed in which a heavy hardwood plank cover was set. The outlet pipe was led to a second barrel set with the top 3 feet below the surface; the bung of the second barrel was driven out and a row of 1½ inch holes bored above the bung. This barrel was set on a loose rock foundation of 6 inches and a space of a foot left around the barrel, was filled with stones raked from the earth dug to make the pit. The whole was covered with earth, making a small rough stone cesspool that should last a number of years without trouble.

The drain pipe from toilet and bath go into the first tank through one pipe set 2 inches higher than the outlet pipe. The outlet has an elbow, the pipe reaching to within 6 inches of the bottom, making a small but perfect septic tank. The plumber who did the piping and who had had considerable experience with septic tanks was skeptical at first but upon the completion of the work said he thought it one of the nicest little schemes he had ever put in, and said he thought it would prove equal to any that he had seen. It was on his suggestion that we left the top with the removable cover, as he said his experience had been that the septic tanks had to be opened and cleaned once in two of the work said he thought it one of the nicest little or more years. He also put in an air vent just beyond the trap under the house, leading it to the roof. This is capped and can be closed or opened easily and will prevent any stoppage from air collecting or gas accumulation in the spetic tank.

There were 50 feet of ditching (40 feet open and 10 under house and shed), all 3½ feet deep in hard packed gravelly soil. As frost strikes 3 feet here during severe winters I decided to take no chances. The cost for the two barrel pits, the setting up of the second barrel and the cementing of the first, including labor and material, but not the piping, was $20. The entire job of putting in bathroom fixtures, with an extra set basin in office, kitchen sink, hot water boiler and water front for range amounted to $200.

As the problem came to me it seemed first that one should decide on the probable water used daily for bath, toilet, sink, etc., and the size of the family with possible



increase. From what little I could find on the subject the barrel tank would care for the sewage for a family of four when running water was not in use. With running water more water is used and probably the barrel would be only suitable for a family of two or three, in which case two barrels might be set side by side with a syphon or straight 4-inch pipe connection, both enclosed in the same pit. Thus far we have used about 30 gallons daily, there being but two in the family. The climate would make the difference in the depth the pipes and the barrels would have to be set; at the latitude of Albany, N. Y., 3½ feet seems a safe depth; Northern New York latitude would probably require 4 feet.

The distance the second barrel should be set from the house would depend on the liability of contamination of any existing water supply or any probable supply; the distance from the supplies in use would depend on the nature of the soil; no rules could be made for the natural dip of the strata in which it was set. If the dip is away from the source of supply and the soil is such that seepage is away from the well, a few feet only are necessary, depending on convenience. There should never be any odor from the plant in house or about the place as all escapes that gas might find are closed by earth or water traps except the air vents which open above the roof.

The cost in most country places without sewage system will be little especially when one considers the very small cost of up-keep as well as the small initial cost. The working capacity of the barrel tank is 40 gallons which compares favorably with that of the septic tanks on the market advocated for small families.

Perhydrol for Disinfection of Instruments.

During the comparative analysis of various preparations of hydrogen peroxide, W. Eichholz found that pure solutions not only do not corrode iron, but actually preserve it. Iron nails will rust in water in a few minutes, but remain unchanged for ten days in diluted Perhydrol, and rusted only when all the peroxide was decomposed. The same was found to be the case with other metals, and only impure solutions gradually destroyed them. The behavior of peroxide toward iron and copper is so characteristic that it may be used as a criterion for the purity of the solution. Perhydrol was found to be the purest preparation and among the solid preparations Perhydit gave the best results, since it only attacked silver. Sterilization of metallic articles with pure 3 per cent. solution of hydrogen peroxide is recommended where heat cannot be employed.—(*Mediz. Klinik*, 1913, No. 51.)

Enteroliths.

F. D. H. Coerr, New York, reports a case of concretion in the bowel about the size of a grape-fruit. He notices the frequent occurrence of these formations in animals and their occasional occurrence in human beings. As regards the diagnosis, from a general study of the subject, he considers the previous history of habitual constipation; hepatic colic attacks, long continued use of indigestible foods, sporadic use of such, observance by patient of a small freely movable lump in abdomen: symptoms of intestinal obstructions, shown by physical examination and the hardness of the substance when palpated and its mobility as important. The Roentgen ray should confirm the diagnosis, or at least be of great assistance.—(*J. A. M. A.*)

MENTAL HEALERS AND THE LAW.

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New York.

Memorandum of the Medical Society of the County of New York in opposition to Senate Bill No. 1153, amending the Public Health Law relating to the practice of medicine.

Before the Hon. Martin H. Glynn, Governor of the State of New York.

Statement.

The bill in question amends Section 173 of the Public Health law, which section now reads: "This article shall not be construed to affect * * * the practice of the religious tenets of any church."

The words "the practice of the religious tenets of any church" by the amendment are omitted from the statute and the following words substituted therefor: "Or any person who ministers to or treats the sick and suffering by mental or spiritual means without the use of any drug or material remedy."

Argument.

The chief objection of the Medical Society of the County of New York to this amendment is that it will admit to the practice of medicine, without educational or professional qualification and without State regulation of any kind, a vast horde of so-called mental healers who, without let or hindrance, may ply their vocation of chicanery and deceit among the ignorant, superstitious and hysterical to the great danger of the health and safety of the people of the State.

This amendment doubtless would never appear before Your Excellency but for the activity of the Medical Society of the County of New York in proceeding in the courts against quacks, faith healers, mental healers, metaphysicians, hynotists, disciples of new thought and Christian Scientists, who have, under the guise of re-

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EDITOR'S NOTE.—This speech was in opposition to the bill which passed the Senate and the Assembly of the State of New York on the closing day of the session, exempting spiritual, mental and drugless healers from the medical practice prohibitions of the Public Health law. The hearing on the bill was held by Governor Glynn on April 13th. About 3,000 advocates of the bill were crowded into the chamber. Former Supreme Court Justice Edward W. Hatch and State Senator McClelland advocated the signature of the bill and its veto was urged by a small delegation of physicians representing different medical societies of the State of New York, including Dr. A. Jacobi, Dr. J. Richard Kevin, of Brooklyn, Dr. John J. O'Connell, Health Officer of the Port of New York, and A. S. Downing, Assistant Commissioner of Education.

Governor Glynn vetoed this bill, saying among other things:

NOT APPROVED:

This bill would amend Article VIII of the Public Health Law, relating to the practice of medicine, by striking out the provision that that Article does not affect "the practice of religious tenets of any church," and substituting a new provision that the Article shall not be construed to effect "any person who ministers to or treats the sick or suffering by mental or spiritual means without the use of any drug or material remedy."

"If it simply allowed Christian Science healers to practice among the followers of Christian Science, there might not be serious objection to it, but it goes further than this and adopts the loose language of the Medical Practice Act of Illinois, where the standards of State education and public health are distinctly lower than they are in the State of New York, and it opens the gates to all kinds of medical pretenders who, as a matter of fact, administer to or treat the sick or suffering by mental or spiritual means, without the use of any drug or material remedy,' and who, if this bill were approved, would swarm across our borders and pretend to practice medicine upon our citizens. Under the phrasing of the proposed law, I am precluded from passing upon the claim of the sincere believers in Christian Science, and I am, therefore, constrained to disapprove the bill."

ligion, heretofore plied their business and avocations to their great personal profit, and, in many cases, to the positive injury of the deluded persons treated by them. This society has hailed before the bar of justice a Christian Scientist claiming under the present statute to practice "the religious tenets of a church," and twelve of his peers, under the instruction of a Justice of the Supreme Court, have determined that his practice was not the practice of religion but the practice of business for profit, the sale of an intangible something for tangible specie, in violation of the statutes of this State. (People vs. Vernon Cole.) That case is now pending before the Appellate Division for decision, and it is obvious that an affirmance is much feared by the defendant and his associates, else we would not be here opposing this bill.

This Society has also convicted one Salvatore Spinella, a spiritual healing fakir of the purest ray serene. His conviction has been affirmed by the Appellate Division of the Supreme Court, and by the Court of Appeals. He claimed to be practicing religion according to the tenets of Spinella's church. He had an altar fitted up and clothed himself in the vestments of the clergy. He sprinkled what he claimed was holy water and salt upon the person of his patients, and he told a woman investigator to take down her stockings, stating that the "closer the cure, the quicker." In the language of the Court which sentenced him to the maximum penalty set out in the law, "he was stealing the livery of heaven for the purpose of serving Mammon."

If this bill becomes a law, he and all others like him may pursue their pernicious practices defiant of law and without restriction of any kind whatsoever.

On the other hand, if the words of the present statute are eliminated therefrom, the priest who in the sanctuary of the faith exposes the sacred relics upon the altar at the Novena of St. Anne, and the rabbi or mohel who performs the minor surgical operation of circumcision, will be exposed to the attack of the very persons whom this bill places upon the plane of licensed and registered physicians, who might rightfully contend before the constituted authorities that the legislature of this State had expressly repealed a provision obviously passed for their protection.

The individuals whom this amendment will benefit do not worship God in church edifices for the uplift of people without charge. They maintain themselves in office buildings with office hours and sell across their desk counters prayer and silence and meditation and philosophical platitudes and religious buncombe to hysterical women and weak-minded men and the minor children of such, unfortunate enough to be within their guardianship, frequently to such an extreme that the Coroner's services are required shortly thereafter.

These same are people whom the Medical Society of the County of New York has prosecuted and some of whom they have put in jail, who would have you legitimatize their practices and turn them loose on the public. We are not speaking here in general terms, but we are prepared to substantiate any statement which we make here by citation to concrete prosecutions in the courts of the County of New York.

The present medical statute is adequate to protect all genuine and sincere believers of God who wish to worship Him according to the dictates of their own conscience.

It never has been a policy of our law in any State of the Union to set up with licensed physicians and surgeons, charged with conserving the health of the people, any other class of healers, clothed with the same authority and vested with the same privileges and yet immune from educational qualifications demanded by the State, and from the governmental regulation and control exacted of all other professions. We deem it unnecessary to say but little more.

The Constitution of our State provides: "The free exercise and enjoyment of religious profession and worship, without discrimination or preference, shall forever be allowed in this State to all mankind; * * * but the liberty of conscience hereby secured shall not be so construed as to excuse acts of licentiousness, or justify practices inconsistent with the peace or safety of this State."

Christian Scientists may not be permitted to benefit by this amendment without including within the protection of the statute numbers of jseudo-religionists, suggestionists and mental healers, whose practices even the Christian Scientists themselves, in my opinion, will not attempt to defend.

In the litigation now pending in the Supreme Court it may be determined that the Christian Scientists may do what they are now doing and not be amenable to the medical statute. If the decision is against them, they may appeal to the Lgeislature, if public sentiment is strong enough, to permit their practice by specific exception, designating them by name. But if this amendment receives the signature of Your Excellency it will set the State of New York back twenty years in its fight for a high educational and professional standard for physicians and surgeons and will make of this State the mecca of the thousands of hungry parasitic descendants of the medicine man and witch doctors of semi-civilized days who now stand impatiently at its borders gazing longingly at the fertile fields which are barred to them by the present statute and by its vigorous enforcement by the constituted authorities.

37 Wall Street.

PSYCHOLOGY FOR THE PHYSICIAN.

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Kramer, Ind.

Although psychology, in its exact sense, is scarcely older than eugenics, the youngest of all the sciences, it already indicates in its movements an intelligence of so superior a degree that the eyes of the whole cultivated world are turned to it in wonder and expectation. There seems to be no limit to the possibilities which psychology may attain, not only on a given subject but on all subjects that come within the scope of the human mind, whether physical, mental or spiritual. Like Bacon it takes all knowledge for its province, and even oversteps that line of demarcation which is premised by the word "knowledge," and serenely enters, scale and measure in hand, into the very garden of wisdom itself. Before the birth of psychology we had been taught that only *things* could be known, that only objects of the senses might be measured and weighed, that all exact science, all exact knowledge, stops short on the border-line between things and thought, beween effect and cause, and that to pass over from the one land to the other would be only to find ourselves in a maze of contraindications and absurdities, a bewildered and hopeless wanderer with no possibility of logical escape.

Ex pede Herculem, we might figure out his stature, was a dictum easily conceded, but that there could be any measure of the exact content of his thought was never dreamed of in our philosophy until psychology

sprang armed and armored from the mind of thinking man, as Pallas Athene sprang full-panoplied from the brain of Zeus. Now, by aid of this twentieth century child of surpassing effulgence, we not only can state in definite terms a man's present thought-content but we can determine why that thought-content is just what it is and nothing else, and even what it will inevitably become in the future if left to go its own way.

With writers on ethics, spirituality and allied subjects the order of the day has been, in the past, always abstraction, generalization statements merely, without proof, or by means of the deductive method of reasoning. And though the deductions have been found to approach, in innumerable instances, marvelously near the truth, this truth has been for the most part a matter of individual opinion, not a scientific, weighed and measured product which all men can see and handle, thereby becoming convinced. When Emerson said, "Serving others is serving us," he found that some men understood and believed him while others neither understood nor believed. He had no proofs to offer, no concrete, positive, tangible facts to support his position, facts which all men might examine for themselves and come to one conclusion upon, as they might in the case of a stone, or a tree, or a mathematical formula, like "twice two equals four." Thus the influence of his thought was circumscribed. But now comes psychology, and, in the able hands of W. H. Walker, in "A Course in Advanced Psychology," proves, in a formula too long to be given here, this very thought of Emerson's, proves it by rule and measure, as a druggist measures a liquid, or a grocer weighs sugar, or a mathematician works out his figures. The value, especially to a doctor, of a method which can reduce such an abstraction to definite terms, can scarcely be overestimated.

Let us take an abstraction not too complicated to work out and show how psychology approaches these wonderful results.

We will consider the much-argued question of alcohol and its effects on a man. Does whiskey make a person more brilliant or less so? Formerly we had no exact proofs on this question, either for or against, and a great many persons could always be found on both sides of it, some interpreting their experience as indicating the affirmative and some the negative. And we were bothered with the matter of the personal equation. Some were held to be made more brilliant and some less, but how much more or how much less, or in what way or ways, it has been left to experimental psychology to determine with exactness, and this it does as follows:

We first ask the subject, any given person, to go through, in his normal condition, a series of mental operations, measuring his speed in terms of a thousandth of a second. We give him a common sum in addition, noting accurately the time he consumes in finding the answer. Then we pass him a list of fifty words, and he is asked to read them to himself, at the same time speaking instantly the first word suggested to him by the sight of each word in the list, and we mark the nature of the spoken word as well as the time employed in thinking what word to speak. Then we measure the celerity and accuracy with which he counts the number of words on a page of a book. We ask him to repeat the first line of the first poem or other writing that comes into his head, noting the time he requires to begin speaking. After this we test his memory by giving him a number of ideas of our own, and asking him to put as many of them as he remembers, and as quickly as he can, into words of his own and these results also we accurately record.

There are countless other tests that can be given the subject, each one of which may throw, in its results, a little light on the problem of this individual's mind-content in its normal condition, the sum of all of them putting him before us in all his nakedness, but those given here are enough to indicate the method employed. Then, having been tested in all these particulars while in the normal condition, he is given similar tests while under the influence of this or that dose of stimulant, and the sums of the two results are compared with all the certainty and accuracy of a mathematical problem, and we find that, in this man's case, certain differences are manifest between the normal and the alcoholic conditions of mind. We then go through the tests with other man and find as a result, without a single exception, that the only sense in which any or all of these men can be said to show increased brilliance under the impetus of alcohol, is in the matter of outer images, things, objects of space and time, superficials—and this only for a few minutes, after which the mind drops back to a slower working than before: ideas, initiative, mental accuracy, determination are dulled almost to the point of extinction, depending on the amount of the dose or doses taken.

Now there is the question answered in definite terms. Nobody could be present during the tests without understanding fully the method and acknowledging the accuracy and the value of results. And no sooner has the method become plain than the physician sees how, in innumerable cases in his profession, he could employ it, or its various principles, to his and his patients' great advantage. It would not be necessary to follow out all the devious ramifications of the tests. A comprehension of the principles involved would prove sufficient. The personal application of them would take care of themselves when the occasion should arrive.

An interesting and valuable item of the subject, taken at its very root, is thus referred to by W. H. Walker, in the work mentioned above:

"The basic condition of clear thinking is that it shall be conducted through the medium of a series of images."

That is, the closer any thought in the mind is connected, by the thinker, with a concrete object with an image the clearer will be his thought of it, the more accurately and the longer will he remember it.

Take as an illustration the name of a man to whom you have just been introduced, on the one hand, and the name "egg" on the other. We have no difficulty in remembering the word "egg," but it is a very common occurrence for us to forget the man's name. Why? Psychology answers that it is because the word "egg" is associated in our mind with an image, with a concrete, tangible fact, with an oval, white, shell-covered object, so that in our effort to recall its name we have the assistance of at least two senses, sight and hearing, we hear the name and see the object, and thus the power of the one sense is reinforced by the power of the other. Whenever we hear the word "egg" a sight of a white oval appears to the mind's eye, by association of ideas, and as long as we remember the one who can scarcely fail to remember the other the association of the sight and the sound having once been established in our mind.

But the man's name, say Dyer, has no such association of sight to us. There is simply the bare word meaning nothing, for it is connected with no specific sight in our

thoughts beyond, of course, that of a man. If he happens to be a peculiarly appearing man that peculiarity will act upon our memory as the white oval of the egg acts, and we shall remember both the man and his name better. But the name of the ordinary, common-looking man, with nothing to point either the name or him off from the every day run of people, will pass easily from our recollection—even though his face may be recognized as one we have seen somewhere, because sights impress themselves more deeply on the mind than sounds do. The remedy for this forgetfulness which psychology points out is this: Think of the man when you first hear his name in terms of images or of an image, as you do of an egg. If his name be Dyer picture to yourself, say, in connection with his face, a dyer of cloth stained with dye, working about his variously colored vats, with the smell of ammonia in the air, etc., etc., creating as many of these images as you can; for the greater the number of these creations of yours the surer and the longer will be your recollection of the name and face. Every time you see him these images, some of them at least, will flash instantaneously upon you and actually force you to remember that the name is Dyer. The principle of imaging once thoroughly established in the mind the practice of it becomes easy, and with continued practice it finally runs into automatic or reflex action, carried on without conscious effort, building up in due season a prodigious memory, which will forget nothing that it wishes to remember.

This method of imaging is so simple and so easily put in force that it has only to be known in order to supplant all others as a system of mnemonics, for it is well-nigh infallible in this respect. But, more than this, it leads directly to a right cultivation of the mind. That a man is what his memory is, that what we remember, what we think and know, that we are, has always been known. Every object of sense, and every idea, with which we come in contact takes its color and significance, as far as we are concerned, from the ability or disability of our own mind. Therefore to cultivate this habit of creating images, which strengthens the memory and gives power to our dormant faculties of invention, is to increase our stature as men. This, in turn, as W. H. Walker shows, increases the good of other people, of the Not-Self, a service which in turn reacts on our Self, and so on and on indefinitely. It is the old formula on culture, that the chief end of man is "to learn and disinterestedly propagate the best that has been thought and known in all ages," only now, with the aid of psychology, we are able to put the reasons why in definite terms, terms that must force conviction on every mind that follows the proofs, however stubborn and ignorant the Ego behind that mind may be. Where, formerly, only the already cultivated could become more so, now, by the aid of psychology, the uncultivated may begin at the very bottom of the cultural ladder and work his way to the summit round by round, intelligently, easily, swiftly, carrying the world on his shoulders, and this too with efforts that are only pleasurable in the exercise.

Psychology, with the well-known and already proved dictum of Professor Joseph Le Conte, that "The higher springs from and then dominates the lower," takes us by the hand and leads us, by ravishingly beautiful ways, into a "doctrine of unspeakable comfort." It shows, step by step, the process by which bodies ascended (and ascend, for the process is always in operation) through all the various stages from protoplasm to man, carrying along with them the attributes and faculties of all the lower orders which they had passed through, into the highest estate, that of man at his best, which state should, by law, dominate all the others, but which so often seems dominated by the lower, and points out accurately the means of restoring the equilibrium wherever it has become disturbed. When Goethe said, "All the faults I see in others I might myself have committed," he indicated his reason for the belief by means of statements that appealed only to the learned or the cultivated; but psychology, making the same statement, proceeds with rule and measure to prove its stand, suceeding in doing so in terms that cannot be controverted, terms which, indeed, nobody could even wish to controvert. And then it goes on, also by rule and measure, to prove why a Goethe did not commit those sins and why others did, at the same time informing those other by what definite, easy, sure methods they may avoid committing them.

For example: As all men have in the process of evolution, from the form of protoplasm, to that of a human being, been at one time in the mind-state of a simian; and as theft, for instance, is a faculty inseparable from a simian mind-state, it follows (by the rule that the higher springs from the lower, which still persists in the body, though it should be dominated by the higher) that all men are born, as men, with the faculty of theft. The possibility of theft lies in all men as a part of their very being. This state of knowledge is the point which Goethe paused to state that he might have committed theft. He might because the faculty of theft was innate in him, as in all men. Then why did he not become a thief? Why do not all men? And why do some and not others? Psychology answers, and proves its truth by weight and measure, that there is also born in man, among all the other faculties, that of theft and that of inhibition, being cultivable, it will depend upon which faculty is most cultivated whether he becomes a thief or one in whom the inhibitory impulse against theft is so strong that he really could not steal. And it then goes on to prove how the one or the other may be cultivated or killed. And so with every faculty of the mind and body, from the stolid inertia of protoplasm, which so many men cultivate by indulgence. through all the changes of animal, vegetable and human life, reaching to spirituality itself. Every man is born with the characteristics still within him of all the lower orders through which he has passed. It is from them that he inherits his passion and his loves, his fears and his hates, his capacities for misery and happines, for success and failure; and psychology shows by exact weight and measure how each of these may be increased and strengthened, causing the atrophy and death of its opposite.

Not the least of the innumerable benefits to be derived from an intimate knowledge of these processes is that of the flood of light thrown upon the proper method by which to approach the stronghold of any given evil. Psychology, proving to us that "all the world is just like our own family," that other men are indeed only ourselves in other forms, paves the way for our love and our spirit of helpfulness, where formerly we were able to feel only disgust, or condemnation. When we have it indubitably proved to us that the man who is injuring us or others or himself is doing so merely because he is ignorant, and not because he really wishes to injure anybody; when it is shown that in his struggle for existence, along with us

his brothers and other-selves he has simply missed the right road, has missed cultivating the right faculties and is sick and frantic with failure, while we fancy we have cultivated rightly and are healthy with success, we may approach him in a spirit which, as psychology proves, is the first necessary ingredient, the very base of the medicine which alone can heal him and restore him to the ranks of unright manhood, to our own betterment as well as his. Physicians themselves were the first to recognize the value and truth of this attitude. While society at large regarded, for example, a criminal as a beast, an ugly animal to be confined where he could do no harm and left to rot back into his primal state of protoplasm, the man of medicine through observations and experiments that were directly in line with the processes of modern psychology, a process which indeed doubtless formed the very beginnings of that marvelous science, arrived at the conclusion that the criminal was a sick man and brother, to be treated as such rather than as an ugly outcast, and the results are showing today not only in all the prisons of civilized countries but outside of the prisons, in the ranks of society itself, which has begun to adopt at last the views advanced by the pioneer physicians. To begin right is a large part of the battle and psychology shows us by weight and measure just how to begin and proceed.

A physician, for example, who is also a psychologist, approaches his patient not as an entity, not as a person to be healed merely of the disease with which he is at the moment afflicted, for he looks upon him as a part of the Not-Self to which he can do a service, a service which by the very nature of service, as is proved by psychology, must react upon himself and all men. It is an opportunity for him to grow in stature mentally and benefit the world, however slight the specific benefit may be. The disease is, to him, the voice of mankind straying in the wilderness crying out to be set in the right path. This portion of it, this man, has cultivated a certain faculty too much, and has not cultivated a certain other enough. Through ignorance he has disturbed his equilibrium, the equilibrium of mankind, and it is the doctor's task to restore this balance and destroy the ignorance that caused the defection. It is not the disease alone that he will treat. Therefore, he does not prescribe drugs alone, he adds patience, kindliness, friendliness, in short love, in order to continue the process of healing in other ways, even after the present affliction shall be past.

He wishes to confer all the benefit he may, and he knows that the disease is a symptom, a sign, merely, of the real trouble which is behind, in the mind. It is a sign that the man entertains certain notions that are hurting him, and it is these notions that are to be corrected, in order that the healing may be permanent, thus conferring upon the sick man a kind of intelligent health, which he may enjoy himself and communicate to others as well. And it is all very simple. There is no shadow of mystery about it, nothing of the so-called occult. The logic mounts irrefutably, round by round, from the bottom of the ladder which rests on solid, gross, tangible materiality (money, for instance) and extends to and into the very skies, as may be seen from the following example.

Suppose a man calls in a physician, saying he is sick and doesn't know what the matter is, and the doctor finds that the matter is appendicitis. One method of healing would be to remove the appendix, pocket the fee, and depart, as a carpenter builds a shed. In this way the patient is relieved, exchanging money for ease, stays a few days in bed, becomes strong and goes his way as before, with no gain of intelligence, of man-stature, while the mechanical doctor also goes his way as before, unconscious of the monumental fact that, by stopping short at the mechanical phase of his profession, he has stultified himself, and blocked up the stream of world-intelligence which it should have been his highest desire to clear of all obstructions, with the result that he must become stagnant in this direction, like a horse-pond, filled with slime, incapable either of receiving or conferring certain benefits. The case is over with when he has employed mechanics upon it, and so, by an exorable law, which is known and proved by the-psychologist, it is indeed over with, as far as he is concerned, though not in the way he supposes. He will never receive any more benefit from it.

But the physician who is a psychologist approaches his patient with a mind accustomed to the beauty of creating images. Not only this, but he regards the patient as a portion of the Not-Self to which he is called upon to do a service. He has to heal a disease, but he has also to prevent future disease, if he can, both for his good and the patient's. The first image that occurs to him is probably that of some food which, ignorantly taken by the patient, has brought on appendicitis. By questions, or other methods, say he discovers too much roast spareribs at the bottom of the trouble. Then he not only proceeds to relieve as best he can, the present symptoms but goes on to place such images before the sick man that he will never suffer in the same manner again. In other words, the doctor, by aid of his acquired power in image-making, will be able to place the evil of eating too much sparerib before the patient in such convincing lights that the very mention of the word "sparerib" thereafter will be repellant to him. During this process, if the doctor conducts it in the proper spirit, the patient will learn how to live properly and to acquire a deep sense of his doctor's intelligence, methods and disinterestedness, which he cannot help imparting to others, in some degree, from whom in turn will come the reaction in the doctor himself in various ways—in increased practice, for one thing, if he really is fitted for his place. But above all it will come in the oneness that he has established for his own Self with the Not-Self, whose power for success is irresistible. From the Humble source of a simple, though intelligent and disinterested desire to be of service he has floated at once into the main channel of the great world-stream, whose mighty flow will carry him, almost without effort of his own, certainly without disagreeable effort, on and on to the ocean of success, which otherwise is known as heaven.

Prospective.

The medical journal of the future is not to be the official journal which is without independence, nor yet the independent journal which offers no official service.

The journal regarded with respect, and valued by its subscribers, is the independent journal which is the servant of the societies whose members are its readers and supporters.

The hope that an official society journal may be independent is remote. That independent journals may become officially most useful servants is no longer a hope but a fact.

The definite progress of the past year has been along this line, and it is definitely along this line that the progress of the New Year will be made.—*Boston Medical and Surgical Journal.*

MEDICAL EXPERT TESTIMONY.*

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New York.

Since speaking upon this subject, as president of the Society of Medical Jurisprudence, I have given careful consideration to the discussion which followed as well as to the various measures, sociological and legislative, which have been proposed, and such as have seemed to be constructive have received attention.

It is conceded by all that medical expert testimony is necessary. It is only one who has received special instruction who can record symptoms and observe signs and one with experience in interpretation of these symptoms and signs who can estimate their value. Still more opportunities for observation and longer experience is necessary for the proper weighing of the evidence, both positive and negative, in order that a correct conclusion may be reached as to the condition which exists, and what the results of that departure from the normal may be, and how far the state may have been influenced by extraneous methods or means, or may be in the future. A conclusion which justly represents the conditions must be reached by observation, analysis and deduction from the premises determined, and this conclusion must be accurate and final. Medical expert testimony then is necessary to aid justice, and it should be freely and effectively used.

Yet, important as this testimony has always been, in these days of civilization of greater and increasing complexity, it has become so essential to many kinds of litigation, that abuses of all sorts have crept in, so that to-day not only is its value in furthering the ends of justice doubted, but even its credibility assailed. In some quarters so great is the distrust concerning it that its effect when presented in court is even problematical. These abuses may be classified:

1. Built up cases. These generally result from unexpected litigation where the patient has been under the care of an ordinary practitioner. They are usually not difficult of detection, and their destruction often is as simple as it is unexpected.

2. The hypothetical question. This may be improper in at least three ways: (a) Unscientific in language, terms being made use of whose exact definition would convey an entirely different meaning, or an incomplete translation of scientific terminology into the vernacular, or again ,the loose use of well-known medical terms which many physicians acquire in their daily relations with patients. The practitioner may possess a distinct intellectual concept, but in his efforts to explain to the patient and to picture this in consonance with the latter's information, he loses distinctness of outline and detail.

(b) Misleading from lack of perspective. Conclusions are based on premises which are estimated in their relative importance, the absence of facts also being taken under consideration, and the final result is reached by the medical as by the legal mind, on the preponderance of evidence.

And finally (c). It is dangerous in formulating conclusions. It often contains much extraneous and irrelevant matter and rarely nothing else. Obviously the recital of alleged facts which have no relation to the subject at issue can lead to no intelligent conclusion. It may contain statements which are not, and never could be placed in evidence, and it has been known to contain conclusions based on alleged facts and even conclusions based upon conclusions.

(d) The unconscionable lengths to which some of these questions go obscure the real facts upon which a proper conclusion may be based, because so much that is irrelevant and immaterial has been inserted.

3. The dual capacity of the medical expert. As medical counselor he very properly advises the legal counselor as to the significance of various medical facts to be presented as evidence, he may assist in developing the direct examination, and he may suggest questions to be used in the cross-examination, and in other ways assist in the presentation of the case. The medical expert should, on the other hand, confine himself solely to the examination of the subject, to the accurate recital of the symptoms and signs which have been determined to exist and to the presenfation of proper medical conclusions deduced therefrom. The combining of these two entirely distinct functions weakens the force and value of medical expert testimony.

4. Conclusions based upon the examinations of others. The errors of observation, the omission of tests and methods of determination of conditions, the injection of conclusions into an assemblage of assumed facts, may entirely vitiate the conclusions of a medical expert when based upon an examination made by another, especially one imperfectly trained, or a careless or an inexperienced observer. If the alleged facts are not trustworthy and are inaccurately presented, the conclusion is more than likely to be misleading.

5. Contingent fees. The medical expert should not allow his recompense to depend upon the success of the litigation, for by so doing he becomes at once a medical advocate, either sensibly or insensibly biased in favor of the client who retains him, and this interest militates against his arriving at a fair and dispassionate conclusion for observed facts, and may even prevent a proper appreciation of these facts. When it is remembered that absence of certain symptoms and signs may be necessary to an exact diagnosis, a premium may be placed upon incomplete investigation.

6. Cross-examination. This should be limited to the facts in evidence, and while a certain amount of latitude is permissible, and even desirable, the pettifogging methods sometimes adopted, lead to the obscuration of important conclusions. Although these methods are disagreeable to the trained expert, they generally do not injure him so much as the ignorant or ill-bred attorney who makes use of them. The real medical expert possessing absolute knowledge of his subject and having the courage of his convictions, generally has little difficulty in bringing about the discomfiture of a counselor of that class or habit. The pettifogger usually gets the worst of the contest.

The causes of these abuses are not to be found entirely in the medical profession, for the legal profession has some, perhaps an equal, responsibility. So long as corrupt lawyers are ready to purchase corrupt medical testimony, the latter will be in the market. If there is improper medical testimony to be bought it will doubtless find a purchaser. So long as there is a debased moral sentiment in the community just so long can this traffic go on without exciting severe criticism. When a barefaced transaction is brought to public notice in a trial which excites, for some reason or another, great general interest, the criticism of the medical expert is apt to be severe and his further opportunities for wrongdoing become limited.

*Presidential Address delivered before the American Association of Medical Jurisprudence, at the Metropolitan Club, New York City, May 2nd, 1914.

These flagrant lapses from correct and scientific conclusions, and properly presented for the instruction of the court, are by no means all the result of barter and a corrupt trafficking in justice, nor by any means more than a small minority of them. From an experience of more than a quarter of a century, ignorance, far more frequently than venality, misleads the court, and tends to the miscarriage of justice. This ignorance may show itself in many places. For instance, at the fountain-head, imperfect observations of witnesses of fact. These indeed, may be the only source of the information from which the expert is able to reach his conclusions.

Another and a frequent cause of the failure of medical expert testimony is the reaching of improper conclusions by experts. This may be due to their (a) lack of general or special training in the field in which the problem may lie, or (b) to their lack of experience in the particular subject matter under discussion, or finally, (c) to their lack of reasoning powers to deduce a proper conclusion from the premises established or to a failure to observe a just perspective.

The last cause of the discredit of medical expert testimony is one which I present with some reserve. I am aware that in article VI and VII of the Constitution of the United States, ratified in 1791, the right of trial by "an impartial jury" is guaranteed in all criminal and in certain common law controversies. It is worthy of note at this point that the Constitution so-called, like the Magna Charta, is, in reality, a bill of rights, and nothing more, as is shown in Article IX, which provides that "the enumeration in the Constitution of certain rights, shall not be construed to deny or disparage others retained by the people." It is a notorious fact that owing to ignorance of matters of common knowledge, narrowness of mind and utter inability to pursue logical thought and so reach any sound conclusion, upon the jury itself must rest the failure of medical expert testimony to further the ends of justice. The crass ignorance of some juries are alike the despair of the bench and the bar, and even more, of the conscientious, scientifically trained and experienced expert. Nor, is the reason far to seek when, as in this State, a public officer, legislator, judge, surrogate, sheriff, his clerk or deputy, teacher, clergyman, person connected with a lunatic asylum, State prison, or almshouse, or a physician, surgeon, pharmacist, veterinary surgeon, embalmer, attorney-at-law, person connected with a press association, or a daily newspaper, or employed on a canal, or steam vessel or railroad or by a telegraph company; or a member or honorably discharged former member of the National Guard, or of a fire company; or a steam-boiler engineer; or a pilot, or a member of the police department, or a grand juror, or a sheriff's juror need not serve. And in addition to those who are excluded by the law, others whose individual responsibilities are so great that service on a jury would involve much personal sacrifice, such as bankers, managers of large enterprises and heads of great corporations, are readily and freely excused by the bench. In other words, a very considerable number, quite likely a majority, of those whose tenure of office or position implies knowledge, training, discretion, and ability to weigh evidence and reach just conclusions, are either excluded by law or by act of the judiciary from occupying a position in which these qualities would redound to justice and the rights of the people of the State.

While no objection could, for a moment, be entertained against the right of trial by jury, the jury system as made by the state law of this and other States, is certainly open to the valid criticism that it defeats in many instances the course of justice, and not only works hardship but may be even iniquitous in its results. For an expert to place before some juries the results of years of conscientious investigation and practice of a subject, upon which he speaks with absolute authority and presents his conclusions in a way which should be readily comprehended by a man of average intelligence, is simply casting pearls before swine.

Such, then, are the conditions. Our work, to be constructive must indicate the remedies. 1. In order that the conclusions reached by medical experts shall be just and fair, they should be based upon the facts as determined by competent examination. 2. The hypothetical question should (a) be based upon proven facts, (b) contain nothing but these facts, and (c) be presented in the form of a brief. 3. Medical experts should be experts only, and should not enter into the controversy in any other guise. 4. The medical expert should make a personal investigation of the symptoms and conduct a physical examination of the persons involved in litigation. If this is impossible, then there should be a preliminary consultation held by the medical experts of both parties to the question at issue (Leed's method). If either of these plans is impossible, then the medical expert should hear in court all the evidence which is presented, and formulate his opinion upon the official record, and upon that alone. 5. Champerty should be forbidden to the medical expert as well as to the medical counsel, precisely as it is to the legal counsel.

The method by which these remedies can be obtained has been discussed for many years, but with indifferent results. Legislation has failed, as might have been expected. Uplift by institutions is rarely successful unless there is, in addition, a personality, strong for good and earnest in effort, conditions generally absent in recent years. Our system of government presupposes equality and tends toward a dead level of mediocrity which is not what is the ideal of expertness in any department of life. The single and conjoined efforts of both bar associations and medical societies have thus far been barren of results. Both recognize the unfortunate conditions, and both have failed to propose any effective remedy. Limiting the expert witnesses who may be called in addition to the list previously determined, is impossible under our common law. And if it were possible, there is at present no body which could designate such a group of experts who should be fairly representative of medical science as it exists to-day. That it cannot be safely entrusted to the bench is perfectly evident from a careful reading of the catalogue of examiners in lunacy in this State, all of whom are judge-made. Under the system by which those medical societies, which have a quasi-official relation to the State, have been for many years, and are at present conducted, selections made by them would not be such as would conduce to better and more honest medical expert testimony, nor would such designation inspire the confidence of the profession at large.

The bench, without additional legislation, can do much to improve the quality of medical expert testimony. An experienced judge can accurately estimate the value of testimony and the credibility of a witness. As he finally decides upon the eligibility of a juror, so, also, should he pass upon the qualifications of an expert. If he will be alert and decided he can do much to obviate the scandals which have marked the trial of many important causes, excluding incompetent and irrelevant testimony, keeping counsel within bounds in

cross-examination, and shortening the duration of trials, and thus obviating so much waste of time. As for medical experts, it is well within the province of the bench to insist that they shall not be mere specialists, but shall have acquired a position of eminence in their profession and are competent to speak with authority.

In this connection two definitions, which are both inclusive and exclusive, are well worth attention. They are attributed to the Regents of the University of the State of New York, and accurately express my own views. The first defines *eminence*. No one has reached a position of conceded eminence and authority in his profession unless it is made to appear that he is deeply and broadly educated, that he has made some substantial contribution to the literature of the medical profession, and that he has been entirely related to some phase of medical practice for a sufficient time to cause him to be widely recognized by intelligent members of the medical profession, as well as by considerable numbers of people who have occasion to be interested in the services which that profession renders to the people. Eminence and authority, as used in this connection, must be given a substantial and significant meaning. The second refers to *authority*, and states that authority in the medical profession is not acquired through a medical education that is only ordinary and a practice that is merely usual; eminence in the profession can be acquired only through the assiduous prosecution of medical practice for a considerable time, and through some special work, that has laid the profession under some obligation to the practitioner.

Believing that these definitions express the qualifications which the medical expert should possess, if he is to further the ends of justice, I formulate these concretely in order that there may be a standard. (1) He must have been graduated from a college of good standing, which is equipped for imparting knowledge and enforcing mental discipline, and which maintains rigorous methods in the granting of degrees. (2) He must have been graduated from a medical school of good equipment and with control of adequate clinical facilities, and which maintains a thorough course of instruction to which are added severe tests for the granting of degrees. (3) He should have been engaged in the practice of medicine and surgery as a general practitioner for at least ten years. (4) He should have been engaged in special study and practice for at least five years, either in laboratory investigation or hospital practice. And, finally, these qualifications must have been recognized (a) by the holding of a teaching position in a medical school of recognized standing, (b) by authorship of a work of acknowledged value, and (c) by membership in exclusive societies, devoted to the investigation and a study of a special branch of medical science. It would seem to be unnecessary to state that qualification as an expert in a particular field of medical science, applies to that field and to that alone.

If the bench will insist upon these qualifications as a minimum, we shall have as medical experts, mature men of trained mind, of broad general medical experience, and of excellent special knowledge, whose eminence and authority could not be questioned. The unfortunate results of medical expert testimony, due to ignorance and incompetence, which comprises the greater portion, would be entirely prevented. The vicious expert medical testimony can be dealt with by methods which obtain in our courts as now conducted. It is to the bench that we look for the remedy of a notorious abuse.

679 Madison Avenue.

TESTS OF KIDNEY FUNCTION.*

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Brooklyn, N. Y.

Gentlemen:—

Instead of operating this afternoon, I will spend the hour in discussing a very important factor in genito-urinary work—the tests of the kidney function.

Dr. Raycroft has prepared three patients for demonstration. We will catheterize the ureters, leave the catheters in one of them, and introduce a permanent catheter into the other two.

We shall inject one of the patients with phenolsulphonethalein and two of them with indigo carmin to demonstrate the method of testing the renal function.

We make these tests of the kidney function for two purposes:

1. To show the secreting capacity of both kidneys together, and
2. In the cases of suspected disease of one kidney to show which kidney is affected.

As to the application of these tests for the double renal function, it is known that in every case of intended operation on the genito-urinary tract there is always likely to be an ascending infection from the bladder which damages the kidneys and we wish to be positive before undertaking any operation that the kidneys are sound. This is particularly true of cases of hypertrophied prostate. We must know if the renal function is impaired, because if the kidneys are diseased post-operative anuria follows and death from suppression of urine occurs after any interference with the genito-urinary tract. For that reason, in these cases of enlarged prostate the test of the kidney function is imperative before any operation is done.

In the other conditions, where we desire to make these tests of the renal function, as in cases in which we know one kidney is diseased, as in tuberculosis or calculus, we must know before we operate that the other kidney is sound and healthy and capable of supporting life. If we are aware that one kidney is diseased and the other sound, we are then able to remove the diseased kidney entirely and we know that the sound kidney is enough to support the life of the patient after a nephrectomy has been done.

These are the purposes for which the tests of the renal function are made in genito-urinary work.

Probably the best test for the action of both kidneys is the phenolsulphonephthalein test. It was first used three or four years ago in Johns Hopkins Hospital by Geraghty and Rountree, and since it has been brought to the attention of the genito-urinary surgeons it is become a routine measure in all cases of intended operation on the urinary tract when we have the time to apply it beforehand.

Before employing the test the patient's bladder is emptied and a centimeter from one of the bottles containing the phenolsulphonephthalein solution is injected into the lumbar muscles or under the skin.

I will demonstrate the technic. This man has a permanent catheter in his urethra. It is now half-past three. To make this test properly we should wait until it is half-past four and then draw off all the urine which has collected in the bladder since the injection and test it with the colorimeter to note the amount of discolora-

* Clinical lecture at Long Island College, Hospital, Brooklyn.

tion which has occurred. The idea of the test is that the phenolsulphonephthalein is eliminated by the kidneys and it discolors the urine red, and we test the amount which has been secreted by the kidneys in one hour and note the readings which we get with the colorimeter; then we collect the urine during the second hour and note the amount the drug secreted during that time.

When the time of appearance of the phenolsulphonephthalein is delayed beyond 25 minutes and the output of the drug is below 20 per cent. for the first hour, it is evident the kidneys are not capable of supporting life under any adverse conditions and operative procedure must be postponed as unsafe.

The indigo carmin test can be used in the same class of cases. It has been found that normal kidneys will secrete the indigo carmin and it will appear and discolor the urine blue in from 8 to 10 minutes.

In the next man, who has also a permanent catheter, we will inject the indigo carmin.

Of course, we have in addition to these color tests of the urine other guides, such as the specific gravity of the urine and the quantity of urea. Those are also exceedingly valuable.

Where the kidneys have insufficient excretion they pour out large quantities of urine (polyuria) with a low specific gravity and a low urea. As the kidneys improve in their secreting capacity the amount of fluid which is excreted diminishes, the specific gravity of the urine rises and the urea increases.

The remarks which I have made so far apply to the cases where we wish to test the function of both kidneys together, but in the cases where we suspect disease of one kidney there are four methods of making a differential test between the function of the two kidneys.

The first step in the examination consists in catheterizing the ureters, and that, you see, has been done in this case. This man has two catheters, one in his left and one in his right ureter. Now we will start to collect the urines from the right and left kidneys.

There are four ways of testing the urine after we have collected it. Some men depend entirely on the amount of urea; for instance, in the case of calculus-pyelitis we had the other day we got 10 grains of urea from one side and 2 grains of urea from the other. We know that the 8 or 10 grains of urea indicate that the kidney on that side is secreting freely, while the capacity of the side secreting 2 grains is very much diminished.

Rovsing, one of the ablest and most careful men in this particular line of work, depends entirely for his diagnosis of the renal function on the urea test, and in the Long Island College Hospital for a number of years, until the introduction of the indigo carmin test, we depended almost entirely on the urea test and the relative quantity secreted by the right and left kidneys.

The second method consists in the introduction of phloridzin, a drug which has the property of causing the excretion of sugar when injected under the skin. The two urines are compared with the right and left sides and tested for sugar, and if there is a high output —for instance, one per cent.—it is an indication that the kidney on that side is healthy, and if there be a low sugar-showing it indicates a lack of secreting capacity on the side on which the low sugar output appears. Phloridzin is not much used now because other tests have taken its place, but before we knew about indigo carmin, phloridzin was used extensively.

The third method is that of cryoscopy, which consists in taking the right and left urines, freezing them and comparing the freezing point. It is an uncertain method and difficult to carry out, and has been practically abandoned except, perhaps, in one or two clinics in Germany where it was first used and where they still hold to it more as a reminder of former methods than anything else.

The best and most practical test for the right and left kidneys to-day is the so-called chromo-cystoscopy, meaning a color cystoscopy. Chromo-cystoscopy was originated by Völcker and Joseph, who at that time were assistants to Bier, then of Bonn, now of Berlin. They found that indigo carmin injected hypodermatically under the skin, would be eliminated in 8 to 10 minutes by the normal kidney and would appear in the urine as a blue stream. If the kidney secretion was faulty the elimination of the indigo carmin would be delayed on the diseased side and the blue would not appear until 40 or 60 minutes and perhaps not at all after the indigo carmin had been injected.

In order to practice chromo-cystoscopy with the indigo carmin, the ureters may be catheterized, as in this case.

You see the two uretral catheters protruding from the urethra and we hold a bottle under each catheter and watch the flow of urine as it drops intermittently into the bottles. We note the time at which the discoloration appears, or we can introduce a cystoscope into the bladder and watch the ureters by turning the cystoscope from one side to the other. Within a few minutes we will see the blue issuing from the mouth of the ureter, due to the discoloration and excretion of the indigo carmin.

Phenolsulphonephthalein may also be used in similar cases to determine the right and left kidney function, but the difficulty about that is that the urine must be collected for one or two hours. That means that the ureter catheters have to lie *in situ* for that time and that is longer than we like to leave them if we can avoid it; so that while it is a perfectly correct test to make, it is not as practical and it is not as convenient as the indigo carmin to differentiate the right and left kidney functions.

While we wait a few minutes for the discoloration of these urines to appear I will be glad to answer any questions.

Q. Of what are the ureteral catheters made?

A. They are made of silk as a basis and are covered with a composition of some kind which is a trade secret.

Q. What do you consider the percentage amount for the phenolsulphonephthalein test that ought to be excreted at the end of one hour?

A. It varies a good deal. Under 25 per cent. it is hands off! We have had it run to 40 per cent., which is good excretion, in the first hour. Sixty per cent. is unusually good.

(This man with the permanent catheter has begun to show blue urine in five minutes. That shows a good healthy excreting power on the part of the kidney.)

Q. In doing a prostatectomy on a young man is there danger of the kidney function being shut off?

A. Young men do not have to have their prostates removed. It is only in men 60 or 65 years of age that the operation is necessary. The only thing a young man gets is a prostatic abscess.

Q. Can you go into a vein?

A. Yes; it has been done, but it is better not to, as there is a slight risk in it.

Q. Can the phenolsulphonephthalein test be done without the use of a catheter?

A. They always advise using the permanent catheter because we may not get all the urine. There may be a little residual urine.

(The urine from this patient with the ureteral catheters is beginning to change, too, both kidneys simultaneously.)

Another great advantage of this indigo carmin test is that we can collect the urines in the test tube, as we are doing here, and can examine them to get the amount of urea; we can examine for pus, casts and bacilli of all kinds, and the coloration does not interfere at all with the other test which we want to make. We can examine for urea, whereas with the thalein test we have to add sodium hydroxide to the urine, so we cannot make other examinations with it.

Q. Will you please explain how you put the catheters into each ureter?

A. We observe the ureter mouths with the cystoscope and pass the catheter through the cystoscope into the opening of the ureter.

Let us now see how our phthalein patient with the permanent catheter is getting on. I find he is not doing very much. He has a jaundice. His eyes are jaundiced and Dr. Read suggests that that may have something to do with his secretory centers, interfering with his secretion.

To show you the trouble which we have to go through, I will ask Dr. Roycroft to make up the standard test solution and also to collect the urine, which we will examine, to show you the method of examining and coloring it. While he is doing so we will look at the urine from the man with the permanent catheter on whom we used indigo carmin.

This indigo carmin test is beautiful. There is no trouble at all with that method. It is very convenient and in my experience it has never been known to fail. There is no trouble at all to make the test, whereas the thalein test is very bulky and cumbersome and we have to take many steps to get it, and it is no better than the indigo carmin test.

Let us now turn to the urine which was tested with thalein.

Dr. Raycroft is putting in the contents of one of these ampoules containing thalein, and he is putting that into the big glass. We have to do that to make our test solution because that is the standard.

We compare this man's secretion with the standard solution. You see, sodium hydroxid is added to make it alkaline. It is diluted. That is the standard solution, the standard color. This solution is poured into this little wedge-shaped glass and it is light and gets darker in color as we go up on account of the wedge shape of the glass. We have an insufficient amount to make this test correctly. We ought to wait an hour, but we haven't the time for that. I am simply showing you the method. This is all that has come within the twenty minutes that the catheter has been in place. You see, the urine has been placed in here and the alkali was added to it and you see that there is absolutely no discoloration at all. If there had been any discoloration or if any of the thalein had been secreted, we would have had a certain amount of reddish discoloration, but there isn't any thalein secreted in the half hour in which the catheter has been in. Probably in an hour it might be the same, and then again it might not. We cannot tell, but that shows that there is no secretion of the thalein. The kidneys are not functionating. We have just added a few drops of some of the thalein remaining in the ampoule, and you see that we have a discoloration, a pinkish discoloration, which would be the case if the man were really excreting some of the thalein.

We will pour this into the little tube which is intended to receive it. You see how the colorimeter registers. Here is a scale, here is the standard solution. Here is the urine that was poured into the cup beside it, and we work that up and down until we get these two matched and then we compare them so we see that this compares with that and then we read off the amount on the scale. It is perfectly simple, and in that way we get the percentage, so we would say there is 20 per cent. excreted; but, as a matter of fact, in this case there was no secretion, but if the color were deeper we would run it down 40 to 60 per cent., and in that way we are able to get the percentage excreted in the first and second hours.

It is very important to make some kind of a functional test in every case which is to be operated on. It has brought the mortality rate down a good deal in operative work, because we now know the cases which are not safe to operate.

Q. Do you give any definite amount of fluid to drink before?

A. That is a good point to bring up. The indigo carmin works better if the patient is fasting from water for several hours. With the thalein I do not think it makes much difference whether or not they drink water beforehand.

Q. When you inject the phenolsulphonephthalein would you give them a glass of water about fifteen minutes after injecting?

A. That hurries up the action of the kidneys very often.

Q. If they took any alcohol by mouth or any medication, would that interfere with the test?

A. It is better not to allow them to have any alcohol or anything of that kind beforehand, as you may get a false reading.

Q. Can we take the time of the appearance of the phenolsulphonephthalein, not the amount of the phenolsulphonephthalein?

A. Yes. The time of appearance also indicates the functional capacity of the kidneys. The amount during the first and second hours is what we depend on.

Q. How long does it take?

A. If it does not appear in 25 minutes it is an indication that the kidney is very badly diseased.

Q. Is there any special significance if you get the test immediately?

A. I have never seen it come immediately.

Q. What are the urinary findings in that patient where the phenolsulphonephthalein has not appeared in 25 minutes?

A. (by Dr. Raycroft). No albumin, but bile.

32 Schermerhorn Street.

The Ninhydrin Reaction.

With a view to the possible application of Abderhalden's ninhydrin reaction to the serum of persons suffering from nephritis, the intoxications of pregnancy, and other conditions characterized by so-called nitrogen retention, R. M. Pearce, Philadelphia, undertook a trial of the test for such conditions. Its success was hardly expected in view of the slight knowledge of the reaction to very minute amounts or high dilutions of amino acids. Forty-seven serums were obtained, chiefly from nephritics and pregnant women, in the hope that occasionally one with severe intoxication might yield positive results. Positive results were not obtained. In every instance where coagulable protein was entirely removed, the test was, as might be expected, negative. A few tests were made also with ascitic fluid, but with like negative results.—(*J. A. M. A.*)

The Medical Times

A MONTHLY JOURNAL

OF

Medicine, Surgery, and Collateral Sciences

ESTABLISHED IN 1872

EDITED BY

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Associate Editor.

Original articles and clinical communications will be welcomed, if given for exclusive use in this journal.

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SUBSCRIPTION RATES:
(STRICTLY IN ADVANCE)

UNITED STATES, (Including Alaska, Cuba, Mexico, Porto Rico, Hawaiian and Philippine Islands)	$1.00 per year
CANADA,	$1.25 per year
FOREIGN COUNTRIES IN POSTAL UNION,	$1.50 per year

SINGLE COPIES, 15 CENTS

Definite written orders for THE MEDICAL TIMES are required from all subscribers, to whom the journal is thereafter regularly forwarded, until written notice to discontinue is sent to the publisher.

All communications should be addressed to and all checks made payable to the publishers,

MEDICAL TIMES CO.

ROMAINE PIERSON, *President and Treasurer*
H. SHERIDAN BAKETEL, *Secretary*

81 Fulton Street - - - New York

Entered as second-class matter, Post Office at New York, N. Y., Act of Congress of March 3d, 1879.

NEW YORK, JUNE, 1914.

Asleep at the Switch.

While over three thousand Christian Scientists appeared before the Governor at the recent hearing on their bill, fewer than fifty physicians were present. Why are there so many medical wayside flowers?

H. G. Wells, in his "Social Forces in England and America," accuses us of exhibiting a spirit of every man for himself and of showing a lack of any sense of identification with the State as something more important and bigger than the individual. He is, of course, speaking of our general public. The "trouble" with the medical man appears to be that he lacks the every-man-for-himself trait but does think of the State as a highly intelligent organization that should and will safeguard highly trained men who are acquainting themselves with the last detail of disease and rendering a community and individual service to which that of the tinkerers with disease cannot be compared for a moment. He trusts the State and, still actuated by traditions of dignity and conservatism, sends no brigades to Albany to wrangle with the cohorts of false religions and pseudo-sciences. All of which is not so splendid as it seems. The absorbed doctor must somehow be induced to change his old viewpoints and become a militant.

The doctor must give up some of his abstract idealism and become practically religious. He must become at least a partial subscriber to the "state religion" of the United States, namely, the worship of the almighty dollar. People who accuse the doctor of commercialism do so on specious grounds but through ulterior motives. These traducers know well that if the doctor were to develop a little wholesome commercialism it would bode ill for fakers and charlatans of every kind, and they therefore try to make him out a monster of commercialism. He does not dare go to Albany for fear of being accused of selfishness. The idea has been bred into him for many centuries by alleged friends that he hasn't a spark of selfishness in him and that he is the most altruistic of all persons, so he is prepared to starve to death with great dignity and grace rather than dissipate the glorious (?) pipe-dream. The truth is that the doctor is neither a monster of commercialism nor the most self-sacrificing of citizens.

The doctor must recover from the obsession that the State is simply dropsical with intelligence and that our legislators and statesmen are abnormally wise and just. He must realize that society is showing no determination to shelter him as an indispensable resource.

It would doubtless be very nice if the doctor's high thought were in behalf of a people worthy of it, but the fact is that modern society has many brutal, sordid and stupid components, and that those eminent in public life cannot be depended upon absolutely to uphold the best principles.

Unless the medical profession addresses itself to its problems with the force which its record entitles it to bring to bear there is no telling what bitter fruit is in store for it. How dynamic this force shall be depends upon real understanding of the value of medical activities and achievements.

What needs to be done first of all has been pointed out insistently by Drs. Henry G. Webster and Charles F. Pabst of Brooklyn. Every medical society should maintain a well paid and efficient legislative committee, which should receive the active co-operation of every member, sinc in every State there is an increasing tendency toward legislative control of the practice of medicine.

Progress.

New conceptions of some old diseases are of great interest and import. Our attitude toward pneumonia has changed most radically in a few years. Now we direct our efforts toward the intestinal tract, recognizing that it is from that source that disaster is perhaps most apt to come. We restrict or eliminate putrefactive food elements. Some men are washing out the colon, though we confess that this seems to us a formidable procedure in pneumonia. The alleged utility of guaiacol carbonate in this disease would seem to depend upon its inhibitory effect upon the growth of the pneumococci in the feces. Experiments are being made in various quarters looking to the inhibition of pneumococcus growth in feces by various agents, with a view to the discovery of the most active. During pneumonia the pneumococcus predominates among the intestinal flora. In a number of series of cases the carrying out of the foregoing principles has given astonishingly low mortalities.

And so with other diseases; pernicious anemia, for example, which bids fair to be classed among the germ affections. Many conditions that used to be called rheumatism are now clearly differentiated. It will not be long before our ideas will be crystallized on the subject of eclampsia, confusing though they are just at present.

Many of the older conceptions are being "knocked into cocked hats." The case of rheumatism is especially interesting. We are familiar with the parts played by the gonococcus and the streptococcus, and Poncet and Stock have shown that tuberculosis is at the bottom of some of the so-called rheumatisms, tuberculin tests causing characteristic reactions in the affected joints.

Socialization.

The socialization of the medical profession is the pet dream of some of our reformers, so-called. Such a blight is being actually planned for us, with all its paralyzing effect upon initiative, and the schemers look for the appearance upon the scene of the uniformed State doctor, working in day and night shifts. It has recently been seriously proposed by certain gentlemen whom it were charitable to dub humorists that the idea be applied in New York City. Such a medical force would not be upon a much higher level than letter carriers. Objections are met with an elaborate scheme involving a highly paid scientist and laboratory staff, who should see that the "force" did not degenerate.

What bunk! Dogberry and the night watch in "Much Ado" come irresistibly to mind.

But so long as the rank and file of the medical profession permit the promulgators of such schemes to pose as their spokesmen, so long as the rank and file do not change their attitude and methods, just so long will these nuisances, these medical yogis, continue to gyrate upon every accessible platform and deliver their fatuous flatulencies to large groups of morons.

If the proposed socialized medical force makes one think of Dogberry and the night watch, or of the policemen in the "Pirates of Penzance," the socialization evangelists themselves make one think of the preachers in Swift's "Tale of a Tub," who were inflated before entering their pulpits and whose eloquence was toned and controlled by certain physiological wind-gauges.

Perhaps were these medical mountebanks less ridiculous we would bear less patiently with them. But we should take them a bit more seriously. They undoubtedly want to be taken seriously and not treated like so many Malvolios and Autolycuses, though no prescience tells them that to be taken seriously would mean the Tarpeian Rock. They should be made to understand that the men who attempt to introduce anything into this country even remotely resembling the government exploitation of the British medical profession because of its hard straits, and for no other reason, except the furtherance of the fortunes of a political opportunist, will be regarded in the light of Benedict Arnolds. Their smug respectability will not forever condone their offenses. In comparison, syndicalists command more respect, because they seek to vest themselves with all the power and property that go with their industries, whereas in the case of our socialization zealots we see a deliberate attempt to abase the medical profession —to make of its members creatures of officialdom and bureaucracy, degrading them and defrauding their miserable charges.

The denatured physician and the further dehumanized proletariat that the diseased imagination of rank individualists posing in socialistic livery projects can hardly, it would seem, ever make actual appearance in this country, despite the extent to which the thought of decadent Americans has been colored by the propaganda of uncouth foreign elements.

Alas! after all, the doctrinarian dervishes who afflict us with their sociological diagrams are the children of our own past sins of omission. The professional abuses which we should have anticipated or promptly abated, which have brought upon us economic distress, and which cannot be too severely arraigned, have also evolved the tribe of latter-day "reformers," those Frankensteins who now gibber at us from so many platforms.

No such thing as a medical constabulary is thinkable except in a country where the economic status of medical men is as low as that of the poor whom they would be expected to serve, and where civil destiny is in the hands of political adventurers and medical intriguers. There can be no change in the essential defects of cheap contract practice simply because the state officializes and partly finances it—and it is wholly unnecessary to particularize those defects, so well understood are they by every enlightened physician. If we are a cheap, decadent crowd, of no more civil account than the sick proletariat itself, then let us succumb to the common exploitation. But if we are strong men let us put a crimp in the scheme and the schemers. The men who would so betray a distressed profession, who would lower its high caste, taking crafty advantage of difficulties that are yet remediable through rational and high-minded effort to further their personal ambitions and gratify their crotchets, deserve something more punitive than our contempt or pity.

There is a profound moral phase of this subject to be considered. By lending itself to merely ameliorative schemes the profession condones and fosters the economic plight of the masses, from whom social justice is withheld. We should not consent to be used as incidental instruments whereby this monumental cheating of the people is sought to be consummated and perpetuated. If the economic condition of the masses was what it ought to be our own fortunes would be conserved and it would not be possible for the retainers of plutocracy to make impudent proposals involving the stultification and degradation of the medical profession. Sound economic policy admits of no compromise with existing social abuses, not to speak of Christian duty. We are weaklings if we fail to meet the indications of the times and to maintain professional standards.

Feminism and the Birth-Rate.

We are not among those who view the advance of the feminist movement with any apprehension on the score of its effect on the birth-rate of the future. With Mr. Joseph Conrad, the eminent novelist, we believe that women will never be able to live up to the wild speculations which some of them "believe they believe." Femininity involves restraint as well as inspiration, and at the same time that it threatens trouble it "prevents them from coming on deck and playing hell with the ship." A low birth-rate is essentially an economic phenomenon. Under decent economic conditions maternity would flourish. Motherhood is necessarily included in the fulfilment of destiny which woman is clamoring for, and under proper conditions would aid and not hamper the development of individuality and the growth of mind and soul. Then it would be the richest of endowments, to be sought eagerly. Then the handicapped woman would be she to whom it might chance to be denied.

Decidua in Appendix.

G. W. Outerbridge, Philadelphia, reports a case of the occurrence of decidua in the appendix after delivery, the second case as far as he is able to ascertain ever reported of the reaction in this locality, though the occurrence of tissues of this histologic description in various other situations outside of the uterus has been described. The origin of such formations is discussed and Outerbridge rejects Taussig's theory of its being due to surface irritation by cellular detritus from the placenta passing out through the lumen of the tubes, and favors that of Loeb of the influence of a sensitizing hormone from the corpus luteum.—(*J. A. M. A.*)

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

We talk about declaring war, forgetting that it already exists. Injustice and strife are with us all the time. The industrial warfare around us is waged fiercely, and every city is studded with field hospitals, the wards of which present every variety of wounds and fractures. Most of the people one passes on the street show plain evidence of the social battlefield. Louis Untermeyer expresses the thought in the following striking lines:

"At Peace?" The world has never been at peace—
Its wars are never ending; there is naught
In all its battles like these overwrought
And storming hours with their dark increase.
The cities roar; in every street one sees
Women and children, battle wounded, caught.
No slaves, no shattered hosts have ever fought
So bitterly, so hopeless of release * * *
Well, if it must be war, take up the sword,
Facing the world with grim and savage glee;
And, with the courage of a Faith restored,
Strike till the darkness falters, and we see
That liberty is no mere gaudy word,
And peace no slothful, placid mockery.

From Public Health Bulletin No. 62 we learn that dissemination of information relative to venereal diseases or to remedies therefor is forbidden by the laws of four States—Massachusetts, Minnesota, Ohio and Oregon. This seems hardly credible, and makes one realize that our educational progress in this field is very recent. In two States laws contain provisos exempting venereal diseases from being considered as "communicable," and therefore subject to control by health authorities—Connecticut and Tennessee.

An editorial in the *New York Medical Journal* of April 11 reveals an alarming condition of the profession in Philadelphia. Upon the authority of Dr. Joseph D. Farrar, chairman of the committee of the American Medical Association on hospital and dispensary abuse, it is stated that fifty per cent. of the physicians of Philadelphia are getting only fifty-cent fees for office consultations, twenty-five per cent. twenty-five cent fees, and about three per cent. only ten-cent fees. They have been reduced to this serious state by reason of the indiscriminate free treatment of patients by hospital and dispensary staffs.

If one looks over the clientele of the average dispensary, one notes that the general character of the patients approximates that of one's private patients. Expert economic investigators would doubtless report the majority of either class unable to pay a private physician. Yet somehow or other our self-respecting citizens manage to employ and pay us. The economic and sociologic expert would doubtless inveigh against their doing so, and would perhaps impatiently refuse to weigh character against pauperization. Doubtless many people do have a struggle to pay the doctor, but they also have to struggle to pay other servants of the public. The hospitals and dispensaries have demoralized the weakest elements in the community, and there appears to be no remedy, for warped character cannot be restored very well. Conceding that the economic experts are technically correct in their estimates, we yet insist that the situation is an immoral one, traceable in the last analysis to the debauchery of the public character by wealth and vanity and their subsidized retainers in and out of the profession. Our fathers, though poor, never thought of getting something for nothing. The abuse of "charity" in its present guise is a wholly vicious phenomenon.

George F. Baer, known as "divine right" Baer, recently deceased, is hailed in an obituary in the New York *Sun* as one who "took a semi-religious view of his responsibilities in life. * * * He had a sense of trusteeship for the benefit of the whole country, of mankind at large." Thus do we laud our coal magnates; but the poor devils who reveal such traits are promptly adjudged insane and clapped into some place of detention. Question: At what degree of wealth does one drop lunacy of this type and become enveloped in sweetness, light and "trusteeship"?

One of the causes of vasomotor ataxia is conceived by Solomon Solis Cohen to be tuberculosis, the vascular anomaly resulting from the body's efforts to set up immunity against the disease. It may perhaps be thought of as a kind of compensatory hall-mark. Cohen has noted it often in persons of "artistic temperament," and in those exhibiting marked intellectual powers. It may bear some relation to genius, in some way facilitating vascular cerebral mechanisms of intricate character, such as we may theoretically conceive to be essential to the peculiar workings of extraordinary minds. The toxins of tuberculosis may act, then, not only by direct stimulation of the higher centers, as noted in such men as Robert Louis Stevenson, but also by bringing about the neurotic and vascular anomaly called by Cohen vasomotor ataxia, making the latter an instrument and avenue for the former. Cohen's work and thought in this field promise to clarify our conceptions of the origin and mechanisms of genius, hitherto baffling and inexplicable problems. He has accumulated many significant data, and has handled them with peculiar insight, though with characteristic conservatism he has as yet made no definitive pronouncements. When he does we may expect a contribution of far-reaching import.

We have the Binet intelligence test and its modifications by Goddard and Dana. They are very useful in determining the mental ages of children and feeble-minded adults. It seems to us that there is a large class of the population who can pass these tests who yet are deficient in intelligence. Thus a person may be able to answer correctly any of the test questions or perform any of the acts required by the test and yet believe implicitly in astrological bunk. How can such matters be covered by test, and what necessity is there for having such tests? We can see no practical difficulty in devising a special test which would cover such matters as the Jonah and the whale episode and the Biblical account of the creation; then there would be spiritualism and yogi doctrine, palmistry and osteopathy; the no-breakfast man could elaborate his fool reasons for injuring himself, and the uncooked food fanatic might be induced to expound his theories. We are in the habit of dismissing all these matters as mere crochets of individuals, but in our view they will yet form a basis for the determination of boobs in Class A, who, while able to engage in the ordinary affairs of life, perhaps successfully, are not valuable citizens when it comes to matters of social import. What a common thing it is to hear great merchants and bankers reveal the most pitiful beliefs and to see them engaged in idiotic practices. Then there is the physician who has a childish faith in the efficacy of some nostrum. Re-

cently at a dinner we heard one of the most eminent clergymen in America dilate on the glorious fact that for every ill that flesh is heir to Nature has elaborated a cure which only awaits discovery on the part of some physician. He seemed to have an idea that medicine was an inexact science chiefly because of these undiscovered cures, and that physicians actually cured people of their diseases. He seemed completely mystified when some medical speaker tactfully dissected his buncombe. In such cases as this we don't think the fact of misinformation is the damning point; the eligibility for class A is proven by the willingness of the boob to prate about something of which he knows little or nothing. Would an intelligent physician attempt to throw any "bull" into a conclave of clergymen on the subject of the atonement, and at great length, too? Winston Churchill, by the way, has written a book ("The Inside of the Cup") which is really a treatise on theology of a sort that probably gives clergymen a headache to read, though doubtless some with a sense of humor find vaudevillian entertainment in this writer's doctrinarian flubdub. Here again misinformation is not the damning thing. Winston Churchill could not be expected to know theology like a theologian. The man's presumption in handing out a lot of unsound claptrap and actually taking his absurd performance seriously is the test. He disposes of the most recondite questions in theology with an assurance that would put Harnack, the great German scholar and authority, to shame.

In what circumstances would such tests be applied? We would say that there should be no let or hindrance on these people so long as they contributed to the gaiety of nations merely, but that so soon as they aspired to direct the destinies of their fellow men that their intelligence should be tested. The tests should be applied to all public officials and all public advisers. Ideally, they should be applied to all exercising the suffrage, in which case the undesirable elements among the voting male population, and the same elements among the female population destined shortly to vote, would be largely or entirely eliminated. That such undesirable elements should be eliminated is recognized. That a highly civilized society would be able to find no means to rid itself of undesirable voters is unthinkable. The Government, when it wants to, finds no great difficulty in devising schemes for keeping out undesirable immigrants, as witness the recent proposals of Congress with respect to a literacy test. The undesirable citizens long within the country constitute a far more serious problem than all the transplanted natives of Europe ever would.

This proposal is not undemocratic. Why assume that democracy implies a relinquishment of intelligence and of rational safeguards? The boobs may occupy the governmental tonneau and be as noisy and foolish as they please, but why should we permit them to interfere with the chauffeur's wheel or engage them to repair the engine?

It is interesting to observe how some of our great corporations handle the problem of alcoholism in their employees. Two instances will illustrate. In one case a young man who had worked himself up from office boy to cashier in the employ of a large iron and steel concern took to drink. He had been with the firm about fifteen years. His alcoholism was of rather brief duration, covering only a few months toward the end of his employment. No question of peculation was involved, and his honesty was never impugned. His work was also satisfactory. The firm had him shadowed, and, after having satisfied itself that he was misconducting himself, promptly discharged him. No time whatever was wasted in warnings or counsel. In the other case the man concerned is in the technical department of a large public utility corporation. He has been a periodical drinker for many years. His escapades occur about twice a year, and he is "out" for about two weeks each time. This corporation is fully aware of the man's weakness, but appears perfectly willing to make the best of the situation. The man is a valuable expert in his line, but draws a smaller salary than he otherwise might by reason of his failing. When he "goes off" the corporation looks after him and gets him straightened out by some neurologist and returned to work as soon as expedient. At least it takes a seemingly hearty interest in furthering the ministrations of family and physician.

What accounts for the differences in management? In the one case we have a man in a position of trust—handling stock-holders' money. In the other case the man's work is technical and his salary kept below "normal." Both methods are based upon economic consideration and take no account of the real problems. The problem of alcoholism is not reckoned with at all, and both men are allowed to go to the devil, the one promptly, the other not so expeditiously. The exigencies of modern big business are apparently met, and we cannot insist that these corporations ought to constitute themselves philanthropic agencies. Nevertheless we doubt whether the best economic interests are served by the methods described. That human interests are not served is undebatable. The problem of alcoholism is a social one, and the forces of society cannot at any point deal with it on a sordid basis. The wreck and ruin entailed thereby operate directly to complicate and foster the vice, and by them it is socially established as well as buttressed. And the corporate treadmills which wreck nervously their workers ought to look closely into their own doings as creators of potential alcoholics. The Ford plant in Detroit is one large corporation which is going to take sociological account of its employees, and, in conjunction with its profit sharing scheme, will endeavor to humanize its operations. Alcoholism is one of the costs of efficiency, along with neurasthenia, lunacy and the rest of the pale brotherhood of disease. Modern big business, thy name is death! Death of the soul, arteriosclerosis of the body, and some part in social alcoholization. But the Juggernaut passes on, and who shall stay its passage? And who shall say it nay when it crushes its artificers beneath its ruthless wheels, when the artificers can no longer oil the wheels which they have helped to create?

The newspapers recently chronicled a story to the effect that the medical students in a Southern University were accustomed to flipping coins to decide who should anesthetize convict patients from one of our great Federal Prisons. The story also alleged that these patients were kept under ether far longer than necessary for purposes of demonstration. Then it was stated that the post-operative patients were transported several miles back to prison in a steel-tired ambulance, oftentimes arriving there nearly dead.

Ex-President Eliot declares that medical students are no more moral than other young men, and that despite their knowledge they are not deterred from taking venereal risks. He is not a believer in education in sexual matters, at least not a very ardent believer, and points to the medical students as lax in personal hygiene and moral cleanliness, although crammed with special knowledge. We can understand this, for knowledge as to sexual hygiene has little or nothing to do with

innate or acquired moral decency. Doubtless, even, venereal prophylaxis in the not far distant future will be practised most assiduously by the most dissolute. But the matter of the medical student's alleged cruelty is really more disturbing. If it is a passing phase of youth, very well, but if it is something that sticks in the man, then we don't think he is in the right profession. These things seem more glaring in a day when the changed conscience of medical workers has seen a mighty development of social ideals. Now more more than ever is humane management paramount in the policies of the profession. Not only is there a better understanding in our minds and a better feeling in our hearts, but a society constantly growing in enlightenment is insisting more and more upon the abatement of everything in respect to the sick that smacks of the unthinking and heartless cruelties of earlier ages.

Medical Editorial Table

Rural Health.

It is pitifully true that rural hygiene is almost an unknown quantity. The first consideration in the placing of the barn and well is convenience, and not health. The same applies to the privy. A deal of ignorance exists that, if swept away, would unquestionably diminish greatly the present rural death rate. Were one to take into consideration the question of enteric fevers alone, there can be no question a proper appreciation of sub-soil dranage and ordinary precautions as to sewage disposal would practically eliminate them. As it is at present, no account is taken in digging a well as to whether the drainage from the stable and from the privy will contaminate it or not, and, in the majority of instances, it seems cheaper and easier to dig a shallow well than to drive a deep one into water-bearing strata, not likely to be contaminated. The State Department of Health is accordingly attempting to create by legislative enactment (Wheeler-Macdonald Rural Hygiene Bill) a Division of Rural Hygiene, which shall, by purely educational methods, bring the dwellers in rural districts to a full knowledge of how they may safeguard themselves, and incidentally those at a distance who, as consumers of milk, or Summer boarders, come into contact with them. The economic side of the question appeals with striking force. The rural death rate in New York is 15.2 per 1,000 population, which affords the State the unenviable distinction of standing next to the top. The number of preventable deaths in the State last year was 3,900, which, figured at the rate of $5,000 per life, brings the loss in dollars to the State up to the astonishing figure of $19,500,000! It may be reasonably questioned whether this method of turning human lives into dollars is the right way to consider humanity but it seems to appeal to certain minds.—(*Long Island Med. J.*, April, 1914.)

The Exchange of Hospital Attending Physicians and Surgeons.

Recent years have beheld a vast development in the idea of travel study in medicine and surgery. The frequent calls made by the universities of Germany and Austria for professors in other institutions and the consequently frequent transformations of the faculties in these universities exemplify the desire to infuse new blood into the bodies of learned institutions. Science rebels against routine. Its healthy existence demands constant renewal. The German idea has found a new development in the creation of exchange professorships between America on the one hand and Germany and France on the other. Would it not be feasible to apply this idea in hospital administration? One of the greatest drawbacks of the modern hospital system is the blighting effect of routine and institutionalism. However great may be the desire on the part of members of the hospital attending staffs to escape from the evils of working in a rut, however eager they may be by their attendance at national and international congresses to acquire new ideas and methods, however assiduous they may be in their visits to the clinics of their colleagues, both in their own country and abroad, nevertheless they cannot altogether escape the deadening influence of routine. The idea of an exchange system could be easily applied in any of the larger cities.—(*Medical Record*, April 25, 1914.)

Hospital Nursing From the Business Standpoint.

The business world has discovered that to get the most for the money the working man must not be worked over a certain number of hours a day. It has learned that the human mechanism differs from ordinary machines in that the quantity and quality of its work are greatly impaired by fatigue and long hours. By actual measurement, it has been found that more money can be made on short than on long shifts. Not always abundantly fed and comfortably housed, the nurse must work from ten to thirteen hours a day, with none too much time for meals, and that at work which is not only fatiguing, since she must be on her feet all day, but which is also wearing on the nerves. At night she is often in charge of twenty or more patients for ten or eleven hours at a stretch. She usually survives the "training," but does she afford the best results to the hospital? Her schooling is a trying ordeal, and this seems to have leaked out, since many hospitals are having difficulty in finding suitable material for their schools of nursing, and if the probationer had always a taste of what she was entering, we fancy there would be still less material. How the nurse ever gets anything out of her theoretical course is a mystery, for she is so fatigued that she finds it almost impossible to pay attention, or even to keep awake, in the lecture room or over her books. We believe that an eight-hour day would tend to give a maximum of excellence in work to the hospital, and at the same time afford a maximum of benefit for the nurse herself. The Public Health Service works its women nurses on eight-hour shifts, although they have already had their special training, and it must do so with the expectation of getting the most out of them. We look for other hospitals to follow the example already set by a few.—(*New York Med. J.*, April 11, 1914.)

Disease Dangers of Mexican Invasion.

What are the disease dangers which will confront American soldiers in Mexico? Vaccination against typhoid and small-pox puts them practically out of consideration. A certain amount of dysentery will be inevitable, due either to bacteria-infected water or ptomain-containing food. There should be no epidemics of malaria or yellow fever, but occasional cases may be unavoidable. Mosquito-nets will protect troops in barracks or permanent quarters, but how about scouting parties, pickets, outposts and troops in the field? Bubonic plague is epidemic in many of the near-by South American ports. It would probably be a constant dan-

ger in the Mexican seaports. Fortunately, it would be confined largely to the seaports and large towns. An army in the field, living in tents on the bare ground, would be practically safe from it. Probably one of the first measures inaugurated by our medical officers on taking possession of a Mexican seaport would be a campaign of rat extermination, as this animal has been shown to be responsible for plague propagation. Cholera, being borne through water, milk, flies or human carriers, can be prevented only through cleanliness and by maintaining the purity of water-supplies. It is not to-day a particularly dangerous possibility, as it can enter Mexico only by way of the seaports, most of which, in case of a campaign, would soon be in the hands of the navy and under quarantine regulations. Typhus, which in past centuries caused enormous loss of life in camps and on shipboard, is limited in its danger, and can easily be prevented by avoiding dirty dwellings and contact with dirty individuals. There is as yet no known method of prevention except the avoidance of infection. Probably a few cases would develop.—(*J. A. M. A.*, May 2, 1914.)

Breaking Through the Barriers.

The fundamental laws in medicine of value to and capable of nibeg understood by the public are those of sanitation, hygiene and preventive medicine, and upon these subjects we are expressly advised to instruct the public as physicians and as public-spirited citizens. What we particularly object to, and will continue so to do, is exploitation of theories, remedies, operations, modes of treatment, and, above all, personality in which the naked "I" affronts modest merit. There is no denying the fact that the competition between medical practitioners was never before so strenuous. This competition should be honorable and no unfair advantage taken of one over another. Remove the ban of medical publicity, establish a free-for-all race to the news columns, and who will be able to tell the quack's advertisement in one column and that of the legalized practitioner in the other? Though we are living in a practical age, where the necessities of existence transform sentiment into utilitarianism.—(*New York State J. of Med.*, April, 1914.)

The American Association of Clinical Research

JAMES KRAUSS, M. D., Permanent Secretary and Editor.

DISEASE CONDITIONS EXPRESSIVE OF CORRECT DIAGNOSIS.*

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Part II.

On the basis of preceding considerations (of Part I.) and of the recognized principle that an anatomic state interfering with important functions and altering the sense of well being is a pathologic state, the following classification gives a practically complete list of disease conditions expressive of correct diagnosis:

1. *Anatomically,* under the six physiologic-anatomic headings of sensory-motor, alimentary, respiratory, circulatory, urinary, sexual diseases.

2. *Etiologically,* as developmental (inherited, congenital, trophic, plastic), traumatic (mechanic, electric, thermic, chemic, etc.), and infectious (parasitic, parasitotoxic) diseases.

3. *Pathologically,* as *disorders* of function (excesses, insufficiencies, perversions, pathological tendencies, according to age, sex, occupation, habits, constitutional resistance); *defects* in continuity (abrasions, wounds, ulcers, fractures), in contiguity (dislocations, malpositions, foreign bodies), in constitution (anaemia, hyperaemia, thrombosis, necrosis); *deformities* (atrophies, hypertrophies, malformations, new growths); and *inflammations* (exudations, degenerations) of organs, tissues and fluids.

A precise, complete diagnosis is made for all possible purposes when we add to the pathologic state the particular etiologic factor and the distinct anatomic seat.

I. Diseases of the Sensory-Motor System.

(Sensation. Intellection. Motion. *Sense Organs:* Eye, ear, nose, tongue, skin. *Nervous system:* Brain, spinal cord, cerebro-spinal nerves, sympathetic system. *Motor organs:* Muscles, tendons, bones, ligaments, joints.)

A. Disorders of Sensation.

(Tactile, visual, auditory, olfactory, gustatory; thermic, kinetic, dissociative; local and general.)

Anaesthesia, Hyperaesthesia, Paraesthesia.
Analgesia, Hyperalgesia, Paralgesia.
Ahedonia, Hyperhedonia, Parahedonia.

B. Disorders of Intellection.

(Perception, Association.)

Amentia: Coma, semi-coma, pseudo-coma, idiocy, imbecility, amnesia, agnosia.
Hypermentia: Double personality, apprehension, phobias.
Paramentia, dementia, hallucinatory, delusional, emotional insanities.

C. Disorders of Motion.

(Emotion, Motion, Locomotion.)

Asthenia: Paresis, paralysis—continuous, intermittent, flaccid, spastic, local, general; anarthria, dysarthria; aphasia agraphia, apraxia.
Hypersthenia: Convulsions—clronic, tonic, choreiform, athetoid, local or general spasms.
Parasthenia: Vertigo, ataxia, astasia—abasia, tremor, nystagmus, fibrillation, etc.

D. Disorders and Diseases of the Visual Apparatus.

The Eye—Sclera and cornea, chorioid and iris, retina and optic nerve, lens, aqueous and vitreous humors, muscles, arteries, veins.
Coverings—Conjunctiva, tarsus, meibomian glands, muscles, skin of brow and lid, cilia, orbit, fibrous capsule,
The Lachrymal Apparatus—Lachrymal gland, lachryducts, canalicueti, lachrymal sac and nasal duct.

1. *Development*:

Anophthalmos, synophthalmos, microphthalmos, hydropthalmos, xerophthalmos, lagophthalmos, exophthalmos, enophthalmos, keratoconus, keratoglobus.

Ectopia, stenosis, coloboma, ophthalmomalacia, ophthalmosclerosis, membrana pupillaris perseverans, arteria hyaloidea persistens, pterygium, epicanthus.

Ptosis, ophthalmoplegia (cycloplegia, iridoplegia, etc.), blepharospasm (nystagmus, etc.), ophthalmospasm, strabismus.

Myopia, hyperopia, presbyopia, astigmatism, hemianopsia, diplopia, amblyopia, nyctalopia, hemeralopia, amaurosis.

*Read at the Fourth Annual Meeting, New York, Nov. 9, 1914.

Anaemia, hyperaemia, embolism, thrombosis, oedema, cataract, opacities, homoeoplasms heteroplasms.

2. *Traumatic:*

Foreign body, burn.

Abrasion, wound, perforation, internal rupture, swelling, haemophthalmos.

Dislocation of lens, retina, iris, fracture of orbit.

3. *Infectious:*

Blepharitis (with or without) entropion, ectropion, symblepharon, ankyloblepharon, fistula, trichiasis, epiphora, xerosis, corneal opacities, pannus, ectasia, etc.

Blepharoadenitis: Hordeolum, chalazion, abscess, etc.

Tarsitis, dacryoadenitis, dacryocystitis, orbital periostitis, etc.

Conjunctivitis.

Keratitis (with or without) abscess, hypopion, ulcer, keratocele, staphyloma, fistula, pannus, opacities, ectasia, etc.

Scleritis, episcleritis.

Iritis, cyclitis, iridocyclitis, iridochorioiditis, chorioditis.

Panophthalmitis.

Glaucoma.

Retinitis.

Papillitis (with or without) optic atrophy.

E. Disorders and Diseases of the Auditory Apparatus.

The Ear—Auricle and external auditory canal, tympanum, malleus, incus, stapes, eustachian tube, mastoid cells, vestibule and semicircular canals, cochlea, auditory nerve, temporal bone.

1. *Developmental:*

Anotia, microtia, polyotia, synotia.

Atresia, fistula congenita, stenosis, ectopia ostiarum, exostosis, hyperostosis, ossification of auricle, otosclerosis of ossicles, etc.

Anacusia, diplacusia, paracusia, hyperacusia, tinnitus, deafmutism, aural ataxia, etc.

Anaemia, hyperaemia, atrophy, hypertrophy, ceruminosis, polypi, cholesteatoma, homoeoplasms, heteroplasms.

2. *Traumatic:*

Foreign bodies, burns, frostbite.

Othaematoma, contusion, abrasion, wound, fracture of temporal bone.

3. *Infectious:*

Otitis externa, media, interna.

Periochondritis, periostitis, necrosis of temporal bone or of ossicles, mastoiditis.

Myringitis, eustachian salpingitis.

F. Disorders and Diseases of the Olfactory Apparatus.

The Nose—Skin, nasal bones, inferior, middle and superior turbinated bones, septum, nasal cartilage, olfactory and nasal nerves, arteries, veins, schneiderian mucosa, nares and nasal fossae.

1. *Developmental:*

Arrhinencephalia, ethmocephalus, cebocephalus, aprosopia, schistoprosopia, cheilognathopalatoschisis.

Ectopia, septal deflection, stenosis, exostosis of crests, spurs, etc.

Anosmia, hyperosmia, parosmia.

Rhinorrhoea, rhinoscleroma, rhinophyma, polypi, adenoids, homoeoplasms, heteroplasms.

2. *Traumitic:*

Epistaxis, hemorrhage, haematoma, abrasion, wound, contusion, fracture of the nasal septum or cartilage or bones, dislocation, etc.

Frostbite, perforation, foreign bodies, rhinoliths, etc.

3. *Infectious:*

Rhinitis, ethmoiditis, antritis, sphenoiditis, pansinusitis, abscess (septal, antral, ethmoidal, frontal, sphenoidal, maxillary), ulcer (syphilitic, tuberculous, etc.), etc.

G. Disorders and Diseases of the Gustatory Apparatus.

The Tongue—Hyoid bone, glossal muscles, papillary mucosa, lingual nerves (glossopharyngeal, inferior maxillary, facial), arteries, veins, glands.

1. *Developmental:*

Microglossia, macroglossia, glossocele, glossoschisis, etc.

Ageusia, hypergeusia, parageusia, etc.

Cyst, homoeoplasms, heteroplasms.

2. *Traumatic:*

Abrasion, bite, wound, burn, dislocation of the hyoid bone, etc.

3. *Infectious:*

Glossitis, hemiglossitis, glossal abscess, sclerosis, ulcer, mucous patch, leucoplakia, etc.

H. Disorders and Diseases of the Tactile Apparatus.

The Skin—Epidermis, corium, subcutaneous tissue, nails, hairs, sweat glands, sebaceous glands, tactile corpuscles, terminal nerves, blood vessels, etc.

1. *Developmental:*

Dermatatrophia (senilis, maculosa, striata); leucoderma (vitiligo, leucopathia); albinism, canities; alopecia (congenital, premature, senile, areata, trophoneurotica, ettc.); atrophia pilorum propria (fragilitas crinium, trichorexis, nodosa, etc.); onychatrophia, onychia sicca, anonychia.

Xeroderma (pigmentosum, non-pigmentosum); ichthyosis (simplex, hystrix); hyperkeratosis (pilaris, follicularis, etc.), callositas, clavus, cornu; verruca (vulgaris, plana, filiformis, digitata, acuminata, etc.); naevus (spilus, pilosus, verrucosus, lipomatodes, pigmentosus, etc.); melanoderma (lentigo, chloasma, xanthoderma, etc.); scleroderma (neonatorum, oedematosa, morphoea, etc.) pachyderma (elephantiasis, etc.); dermatolysis (pendulous, non-pendulous); hypertrichosis; onychauxis.

Dermatalgia, pruritus, prurigo, dermataneuria (anaesthesia, paralysis).

Anidrosis, hyperidrosis, miliaria (sudamen), bromidrosis, chromidrosis, uridrosis, phosphoridrosis, haematidrosis, etc.

Seborrhoea (oleosa, sicca, capitis, corporis, etc.), comedo, milium, steatoma, dermathemia (roseola, etc.), dermatodyschroia (haemochromatosis, argyria, achromia).

Purpura (simplex, urticans, rheumatica, hemorrhagica, scorbutica, etc.); dermatonecrosis (ainhum, malum perforans, etc.).

Dermatomata: Homoeoplasms, heteroplasms (fibroma, neuroma, xanthoma, myoma, angioma, telangiectasis, lymphangioma, epitheloma, sarcoma, etc.), dermatocystoma, dermostosis.

2. *Traumatic:*

Dermatosis (factitious, excoriating, caloric, ingestive, medicamentous, venenous, etc.), dermatoconiosis, dermatorrhagia (petechiae, ecchymosis, haetmatoma).

Intertrigo, decubitus, incarnatio unguis, wounds, contusions, necrosis, cicatrices, keloid, etc.

3. *Infectious:*

Erythema (multiforme, papulosum, vesiculosum, bullosum, nodosum, gangraenosum), morbilli, scarlatina, erysipelas, macular syphilis, lupus erythematosus, pellagra, dermatocellulitis.

Acne (vulgaris, rosacea, punctata, papulosa, pustulosa, indurata, atrophica, hypertrophica, cachecticorum, etc.), lichen (ruber, planus, urticatus, scrofulosus), furuncle, carbuncle, sycosis, dermatitis papillaris capillitii, chancre, chancroid, papular syphilis (miliary lenticular, moist, squamous), lupus vulgaris, scrofuloderma, leprosy (nodular, anaesthetic), verruca necrogenica, endemic verruga (yaws, etc.), equinia (glanders).

Urticaria (oedematosa, bullosa, papulosa, tuberosa, pigmentosa, etc.).

Eczema (rubrum, squamosum, rimosum, sclerosum, verrucosum, etc.), herpes (simplex, zoster, iris, etc.), dermatitis herpetiformis (hydroa), eczema seborrhoicum, dysidrosis (cheiropompholyx).

Pemphigus (vulgaris, foliaceus), bullous syphilis.

Impetigo (simplex, contagiosa, herpetiformis, etc.), ecthyma, variola, pustular syphilis (small or miliary, large or acneform, shot or variolaform, flat or impetigo or ecthymaform, rupial), malignant pustule (anthrax), postmortem pustule, phlegmon, panaritium (paronychia).

Psoriasis (punctata, guttata, nummularis, circinata, gyrata, diffusa, etc.), squamous syphilis, dermatitis exfoliativa, pityriasis (rosea, rubra pilaris).

Tubercular syphilis (ulcerating, non-ulcerating, serpiginous, papillomatous, etc.), gummatous syphilis (syphiloma, ulcerating, non-ulcerating).

Psorospermosis — Follicularis vegetans, molluscum contagiosum, sporotrichosis, amoebaeosis.

Dermatomycosis, onychomycosis—Tinea favosa, tonsurans, barbae, marginata, imbricata, versicolor; erythrasma; actinomycosis, blastomycosis, podelcoma, etc.

Dermatozoonosus—Scabies, pediculosis, cysticercus cellulosae, ecchynococcus, Bilharzia haematobia, filaria medinensis, ixodes, leptus, oestrus, pulex penetrans, cimex lectularius culex, pulex irritans.

I. Disorders and Diseases of the Nervous System.

The Cerebro-Spinal System—Cerebrum, cerebellum, pons, medulla oblongata, spinal cord, ganglia, cranial and spinal nerves, meninges (dura, pia, arachnoid), blood vessels etc.

The Sympathetic System—Sympathetic ganglia, vascular and visceral nerve fibers.

1. *Developmental:*

Holorachischisis, craniorachischisis, merorachischisis, myelomeningocele, spina bifida, myelocystocele, myelocystomeningocele, diastematomyelia, acrania (cranioschisis), anencephalus, derencephalus, cephalocele, encephalomeningocele, meningocele, meningoencephalocele, encephalocele, hydrencephalocele, cyclocephalus, cyclops, aprosopia, schistoprosopia, cheilo-gnatho-palatoschisis, prosoposchisis, brachygnathia, agnathia, etc.

Microcephalus, mycrogyria, mycromyelia, macrocephalia (cretinism, acromegaly, etc.), hydrocephalus, hydromyelia, porencephalia, pseudoporencephalia, syringomyelia.

Encephalomalacia, myelomalacia, sclerosis (diffuse, anterior, lateral, posterior, insular, multiple, ependymal, cerebral, spinal, cerebrospinal, neural, etc.), pseudosclerosis.

Anaemia, hyperaemia, oedema (angiospastic), hemorrhage (aneurismal, apoplectic, etc.), thrombosis (veinis, sinuses), embolism, etc.

Homoeoplasms, heteroplasms: encephaloma, myeloma, neuroma (glioma, fibroma, sarcoma, gliosarcoma, angiosarcoma, osteoma, angioma, myxoma, lipoma, endothelioma, etc.).

Trophoneurosis (vascular, visceral, hyperaemic, ischaemic, oedematous, hyperplastic, hypoplastic, necrotic, dermic, myopathic, osteopathic, arthropathic), angiospastic.

Symmetrical gangrene (Raynaud's Disease), erythromelalgia, neuralgia (cranial, spinal, trigeminal, facial, etc.), migraine, insomnia, somnolence, somniloquy, astereognosis, etc.

Epilepsy, chorea, paramyoclonus multiplex, paralysis agitans, athetosis, tetany, myotonia congenitalis, hysteria, catalepsy, neurasthenia, psychosis (cerebral, etc.).

2. *Traumatic:*

Concussion (cerebral spinal, etc.), compression (epilepsy, etc.), contusion (skull, back), wounds (bites, etc.), hemorrhage (external, internal, meningeal, cerebral, cerebellar, pontile, spinal, etc.), haematomyelia, haematorrhachis, fracture (skull, vertebrae), dislocation (vertebrae), necrosis (spinal caries, etc.)

Neurosis (railway spine, railway brain, occupational writer's cramp, etc.), insolation (heat exhaustion, sunstroke), caisson disease, poisoning (chemical, etc)., shocks (electric, heat, burns, etc.).

3. *Infectious:*

Encephalitis (focal, purulent, haemorrhagic, mycotic, syphilitic, tuberculous, etc.) meningoencephaliti s,pachymeningitis (cerebral, spinal), leptomeningitis (cerebral, spinal), cerebrospinal meningitis, myelitis (ascending, descending, transverse), leucomyelitis, poliomyelitis (anterior, acute, chronic, etc.), poliomyelencephalitis, meningomyelitis, neuritis, (ascending, descending, ganglionic, peripheral, single, multiple, etc.).

Tetanus.

Ecchynococcus cysts, syphiloma, etc.

J. Disorders and Diseases of the Motor Apparatus.

The Muscles and Tendons—The bones, ligaments and synovial membranes—the joints, etc., etc.

1. *Developmental:*

Myasthenia (gravis, etc.), myalgia (myodynia), myatrophia (central, peripheral, disuse, etc.), myohypertrophia, myopseudohypertrophia, ostealgia, arthralgia (metatarsalgia, etc.).

Amyotonia (congenita, etc.), myotonia (congenita, acquisita, etc.), myospasmia (dancers, players, workers, etc., considered under traumatic occupational neurosis), contraction (carpopedal, palmar, cicatricial, torticollis, hammertoe, mallet finger, trigger finger, etc.), contracture (permanent shortening), ankylosis (fibrous, osseous), curvature; coxa vara, coxa valga; genu valgum, genu varum; pes valgus, varus, cavus, planus, calcaneus, equinus and combinations; hallux valgus, varus, etc.

Myocele, osteocele, myomalacia, myosclerosis, chondromalacia, chondrosclerosis, osteomalacia (kyphosis, lordosis, scoliosis), osteoporosis, osteopsathyrosis, osteosclerosis, osteolysis, osteodiastasis (epiphyseolysis), hyperostosis, exostosis, enostosis, osteotabes, pseudarthrosis, synostosis, syndesmosis, ainhum, etc.

Nanosomia, macrosomia, chondrodystrophia (foetalis), osteogenesis imperfecta, homoeoplasms and heteroplasms—myomata—liomyoma, rhabdomyoma, lipoma arborescence, fibroma, sarcoma, etc.), chondromata (chondromyoma, etc.), osteomata (sarcoma, carcinoma, osteochondroma, fibroma, osteocystoma, etc.).

2. *Traumatic:*

Contusion, sprain, rupture, hemorrhage, wounds, fractures, dislocations, foreign bodies in joints (corpuscula oryzoidea, etc.), etc.

3. *Infectious:*

Myositis (single, multiple, suppurating, non-suppurating, trichinous, neural, fibrous, ossifying, etc.), tenosynovitis (tendinitis, tendovaginitis, hydrops, hygroma,

ganglion crepitans, etc.), bursitis, chrondritis, perichondritis, periostitis, ostitis (hypertrophicans, derformans, etc.), osteochondritis, osteomyelitis, arthritis (panarthritis, polyarthritis, spondylitis, coxitis, gonitis, etc., purulenta, sicca, deformans, etc.), synovitis, parasynovitis, sinusitis (ethymoidal, frontal, maxillary, etc.).

Osteonecrosis (fistula, caries, abscess, etc.).

Parasitic cystomata (hydatid, cysticercus, etc.).

(To be continued.)

Part I. was published in the MEDICAL TIMES, page 202, 1913.

Special Article

The Kinetic System.

At the opening session of the Medical Society of the State of New York on April 29, Dr. George W. Crile, Professor of Surgery in Western Reserve University, Cleveland, in the oration on surgery, advanced a new theory, which, if it bears the light of further scientific investigation, will be quite as striking as his "anoci-association," by which he blocks off from the brain the section to be operated upon by novocain and urea and quinin hydrochlorid.

The Kinetic system is composed of the brain, thyroid, suprarenals, liver and muscles. After analyzing the system and giving the functions of the constituent organs, Dr. Crile said:

"I am formulating a theory which I hope will harmonize a large amount of clinical and experimental data, supply an interpretation of certain diseases and show by what means many diverse causes produce the same effects.

"If our conclusions are sound, then in the kinetic system we should find an explanation of many diseases, and having found an explanation we may find new methods of combating the diseases.

"The responsibility for the kinetic theory is assumed by myself, while the responsibility for the experimental data is shared fully by my associates, Drs. J. B. Austin, F. W. Hitchings, H. G. Sloan and M. L. Menten."

None of the various other systems of the body, Dr. Crile asserted, is "evolved primarily for the purpose of transforming potential energy into kinetic energy for specific ends.

"No one of them transforms latent energy into kinetic energy for the purpose of escaping, fighting, running, combating disease, etc. The kinetic system is primarily for the transformation of latent energy into motion and heat."

Energy is appropriated by the body from the physical forces of nature that constitute the environment, Dr. Crile said, and this energy is stored in the body in quantities in excess of the need of the moment. It is the function of the organs of the kinetic system to transform the surplus so stored into action and heat as needed.

This mechanism of organs produces fever as well as muscular activity, fever being heat generated to combat disease. Bacilli do not live as well in a fevered body as in a body at normal temperature. A study of the five organs of the kinetic system showed Dr. Crile that they were affected in the same way, no matter what form transformed latent energy took, whether heat in fever or motion in muscular activity.

He offered evidence to show that an excess of either internal or external environmental stimuli might modify one or more organs of the kinetic system and that this modification might cause certain diseases. The amount of latent energy which might be converted into kinetic energy varied in different species; in individuals of the same species; in the same individual in different seasons; in the life cycle of growth, reproduction and decay; in the waking and the sleeping hours; in disease and in activity. The author then considered the reasons for some of those variations and the mechanisms which made them possible.

If his belief that men and animals were mechanisms responding to environmental stimuli was correct, and if the speed of energy output was due to changes activating the organs as a result of adaptive stimulation then they should expect to find physical changes in the activating glands during the cycles of increased activation. advance of the season of maximum food supply so that the young might appear at the season when food was most abundant. During the mating season the thyroid was known to enlarge materially, though this increase in thyroid activity was probably no greater than the increased activity of other glands. Not only was there a seasonal rhythm in the rate of flow of energy, but there was a diurnal variation, the ebb was at night and the full tide in the day time. In addition there were variations also in the rate of discharge of energy in the various life cycles of the individual. The young were evolved at higher speed for growth, so as the sooner to develop the power of self-protection. They must adapt themselves to bacteria, to food, to all the elements in their environment. The cycle of greatest kinetic energy ended with the period of reproduction. The secondary sexual characteristics might be developed at will—for example, by feeding thyroid products from alien species to the individual deprived of the thyroid. The author then considered the conversion of latent into kinetic energy in the production of heat.

The question which arose at once was: Was there one mechanism for the conversion of latent energy into muscular action? What was the adaptive advantage of fever? In fevers there was a diminished intake of energy but an increased output of energy, hence the available potential energy in the body was rapidly consumed. This might be an adaptation for the purpose of breaking up the foreign protein molecules composing the bacteria. Thus the body might be purified by chemical combustion so furious that frequently the heat itself was destroyed. As to the mechanism which produced fever, he postulated that it was the same as that which produced muscular activity. Muscular activity was produced by the conversion of latent energy into motion, and fever was produced largely in the muscles by the conversion of latent energy into heat. They should, therefore, find similar changes in the brain, the adrenals, the thyroid, and the liver whatever might be the purpose of the conversion of energy, running, fighting, emotions or infections. As a result of excessive activity from whatever cause experimental evidence was adduced tending to show what part was played by the brain in the production of muscular and febrile action, and then the part played by the suprarenals, the thyroid and the liver was discussed.

To this end Crile had studied the brain cells in human cases of fever, in animals after prolonged insomnia, after the injection of toxins, gonococci, streptococci, staphylococci, bacilli of tetanus, diphtheria and typhoid, of foreign proteins, indol and skatol; of leucin and peptones. He had examined the brains of animals that had been activated in varying degrees up to the point of complete exhaustion by running, fighting, by rage and fear, by physical injury and by the injection of strychnine; the brains of salmon and the brains of electric

fish, the brains of woodchucks in hibernation and after fighting; the brains of humans who had died from anemia, resulting from hemorrhage, from acidosis, from eclampsia, from cancer, and from other chronic diseases. They had studied the brains of animals after the excision of the suprarenals, of the pancreas, and of the liver.

In every instance the loss of vitality, the loss of normal power to convert potential into kinetic energy was accompanied by physical changes in the brain cells. *The changes in the brain cells were identical whatever the cause.* The crucial question then became: "Were these constant changes in the brain cells the result of work done by the brain cells in running, fever, emotion, etc.?" In cross circulation experiments he had found that the brain cell changes were not due to waste products or to metabolic poisons. Crile found that in the production of muscular action and of fever there were brain cell changes which showed a quantitative relation to the temperature changes or to the muscular work done. He had observed that under deep morphinization the febrile response or the muscular work done was either diminished or eliminated and that the brain cell changes were correspondingly diminished or eliminated. He found also that brain cell changes and muscular work followed electrical stimulation alone. He therefore concluded that brain cell changes were work changes.

Dr. Crile, in discussing the separate functions of the brain, suprarenals and liver in the transformation of latent into kinetic energy, drew a comparison with three parts of an automobile.

"It would appear that these three organs take the stress of life. The brain is the battery, the suprarenals the oxidizer (or carbureter) and the liver the gasoline tank.

"With these three kinetic organs we may surely associate also the 'furnace,' or muscles, in which the energy provided by the brain, the suprarenals and the liver—plus oxygen—is fabricated or made into heat and motion.

"But neither the brain, suprarenals, liver nor muscle have the power to change the rate of the expenditure of energy, to make possible the increased expenditure in adolescence, in courting and mating, and in combating infection. None of these organs nor all of them combined can act as a pacemaker or sensitizer. The brain acts immediately in response to the stimuli of the moment; the suprarenals respond instantly to the fickle brain, the liver contains fuel only and cannot activate, and the muscles in turn act as the great furnace in which the final transformation into available energy is made.

"The thyroid has the special power of governing the rate of discharge of energy; in other words, the thyroid is the pacemaker."

Dr. Crile showed that the five organs named were linked inseparably and that action upon one of them produced action in measured proportion upon all of the others. He said:

"When the brain is physically impaired in cerebral softening it cannot normally stimulate the other organs to the conversion of latent energy into heat or action. In cases of cerebral softening we find feeble muscular and intellectual power. In a disease affecting the suprarenals as Addison's disease we find accompanying the impairment of the organ subnormal temperature and impaired muscular power. When the function of the liver is impaired by tumors or degeneration of the liver itself, then the entire energy of the body is correspondingly diminished. If the muscles are impaired by a prolonged disease, then the range of production of both heat and motion is below the normal. Likewise impairment of the thyroid is accompanied by a loss of physical and mental energy.

"Deficiency in one of the organs of the kinetic chain causes alike loss of heat, loss of muscular and emotional action, of mental power, and of the power of combating infection. The brain, suprarenals, liver, muscles and thyroid are the vital links in the kinetic chain, and a chain is no stronger than its weakest link.

"From this we are able to understand the muscular weakness following fever; we can understand why the senile have neither muscular power nor strong feverish reaction; why long-continued infections produce pathologic changes in the organs constituting the kinetic system.

"Physical or mental shock caused by pain, fear, rage or exercise causes an impairment of the kinetic system, because shock means the transformation of potential energy into heat or action. The temperature rises when one is in pain, in fear, or temper. In this transformation of energy the organs of the system are used up, as it were, and must be repaired by rest and the absorption of more excess or potential energy. It is desirable, therefore, that unnecessary or too severe shocks be avoided, and the first step in the avoidance of shocks has been made possible by the knowledge of the kinetic system.

"The essential pathology of shock is essentially the same whatever the cause and whenever any one link in the kinetic chain is unable to bear the strain the balance is destroyed. If the brain is the weakened link, then neurasthenia, nerve exhaustion, or even insanity follows. If the thyroid can not endure, then that organ undergoes hyperplasia, which results in colloid goiter or exophthalmic goiter. If the suprarenals cannot bear the strain the cardiovascular disease may develop. If the liver, then death from acute acidosis follows, or if the neutralizing effect of the liver is only partially destroyed, then the acidity may cause Bright's disease. Over-activation of the kinetic system may cause glycosuria and diabetes. Identical physical and functional changes in the organs of the kinetic system may result from intense continued stimulation from any of the following causes: Excessive physical exercise, worry or anxiety, athletic exercise, chronic infections, such as oral sepsis, tonsilitis, adenoids; chronic appendicitis, chronic cholecystitis, colitis, skin infections, emotional strain, intestinal autointoxication, excessive intake of proteid food, business or professional strain. In this hypothesis one finds the reason why cardiovascular diseases may be caused by chronic infection, by acute intestinal autointoxication, overwork or emotional excitement. The problem is whether this theory will stand the test of clinical experience; of controlling the protein disease bred in the stress of daily life. The force of the kinetic stimuli may be broken at the thyroid by dividing the nerve supply, reducing the blood supply, or by partial excision. We already have the shockless operation, the surgical treatment of Graves' disease, the control of shock and the acute infections by overwhelming morphinism."

It is Dr. Crile's idea, therefore, that with knowledge of the kinetic system men in present-day life, by "intelligent control of the system at the brain link," that is, by controlling the "electricity" that flows from the "battery" and starts the whole system working, may conserve the whole system and keep each link in the chain strong.

Besides taking up this control aspect Dr. Crile also

discussed recuperation. He prescribed sleep as the great restorative and told of an experiment which demonstrated his belief.

"Groups of rabbits were gently kept awake for 100 hours by relays of students—an experiment which steadily withdrew energy, but caused not the slightest physical or emotional injury to any of the subjects. This protracted insomnia gradually exhausted the animals completely, some to the point of death even. Some of the survivors were killed immediately after the expiration of the 100 hours of wakefulness, others after varying intervals. Microscopical studies were made of every tissue and organ in the body of each. Three organs, the brain, the suprarenals and the liver, showed microscopic or histological changes, and these three only showed such changes. In these three organs the histological changes were marked, but they were almost wholly repaired by one seance of sleep. In each instance the changes were identical with those seen after physical exertion and emotion."

In considering the relative importance of the organs in the system, Dr. Crile said that all were about equally vital. Contrary to general opinion, he said, of the brain, the suprarenals and the liver, the brain, if any, was the least vital. The body of a dog had been kept alive, he said, for eleven hours after the brain had been removed.

We shall await further study in this direction with keen anticipation.

American Medical Editors' Association.

On June 22nd, at 9 a. m., the Association will meet at the Marlborough-Blenheim Hotel, Atlantic City, under the presidency of Dr. E A. VanderVeer of Albany, N. Y. An unusually attractive program is being prepared. Among the papers are the following:

President's Address, Dr. VanderVeer.

"Relation of the Medical Press to the Cancer Problem," Mr. Frederick L. Hoffman, Statistician of the Prudential Insurance Company, Newark, N. J.

"The Things That Count in Medical Practice," H. Edwin Lewis, M. D., New York.

"Ideal National Medical Journal: What It Should Be and What It Should Not Be," W. J. Robinson, M. D., New York.

"Two Problems of the Organization Journal: The Mediocre Paper and the Editorial Department," Sarah M. Hobson, M. D., Chicago.

"Medical Journalism as a Local and as a National Proposition," Thomas S. Blair, M. D., Harrisburg, Pa.

"Medical Books and Journals," T. D. Crothers, M. D., Hartford.

"The Medical Periodical and the Scientific Society," F. H. Garrison, M. D., Washington.

"Editorial Experiences," A. L. Benedict, M. D., Buffalo.

"The Special Medical Journal," A. Bassler, M. D., New York.

"The Medical Profession and Its Influence from a Buying Standpoint," Joseph MacDonald, Jr., M. D., New York.

"The Preparation of the Original Article and the Editor's Latitude," E. Franklin Smith, M. D., New York.

"He Among You Who Is Without Sin Shall Cast the First Stone," Erwin Reissmann, M. D., Newark.

Pyuria is present in all cases of renal tuberculosis at some time or other during the course of the disease.

American Association of Medical Jurisprudence.

The annual meeting of this association was held in New York on May 2nd. The business session was held at the Metropolitan Club, and called to order by President Reynold Webb Wilcox. Several new members were elected, and after the usual business, Dr. Wilcox delivered the presidential address on "Medical Expert Testimony." It was decided that the Association propose as a "feasible suggestion, the suggestion that medical bodies be asked to define medical experts for the benefit of jurors, so that jurors may be guided as to the definition of what medical expert testimony is." It was also voted to "consider the favorability of advocating a plan whereby in advance of trial, in which medical expert testimony is required, counsel can agree on the nature of such expert testimony with the consent of the judge."

Dr. Wilcox entertained the members of the Association at luncheon at the Metropolitan Club. The scientific session was held in the afternoon at the New York Academy of Medicine. The following papers were read and discussed:

(a) Sterilization Laws. By Charles A. Boston, Esq.

(b) Sterilization of the Unfit by Vasectomy, from the Medico-Surgical Standpoint. By A. Ernest Gallant, M. D.

(c) Societies of Medical Jurisprudence—Their Defects—The Remedy. By Oscar W. Ehrhorn, Esq.

(d) Problems in Psychiatry and Penology. By Frank Wade Robertson.

(e) A Scientific Substitute for the Death Penalty. By John S. Durand, Esq.

(f) Do Professional Ethics Require a Physician to Disclose to His Patient an Unfavorable Prognosis. By Theodore Sutro, Esq.

(g) The Nature of Arteriosclerosis and Its Relation to Mental Efficiency and Deterioration. By Louis Faugeres Bishop, M. D.

These officers were elected:

President, Charles A. Boston, Esq., New York.

First Vice-President, Oscar W. Ehrhorn, Esq., of New York.

Second Vice-President, D. Percy Hickling, M. D., of Washington.

Secretary, Charles P. Blaney, Esq., of New York.

Treasurer, John C. West, Esq., of New York.

In the evening the banquet was held at the Cafe des Beaux-Arts, at which Dr. Wilcox presided as toastmaster.

Medical Reserve Corps, U. S. A., Illinois Division.

Sixty-seven members and invited guests of the association enjoyed the annual dinner in Chicago, April 30. The invited guests were: Col. Wm Stephenson, Chief Surgeon of the Department of the Lakes; Col. Jas. A. Harvey and Capt. C. C. Billingslea of the army, and Dr. Geo. B. Young, U. S. H. S., Health Commissioner, Chicago. Resolutions were passed on the death of Col. D. M. Appel, U. S. A. These officers were elected: Lieut. W. L. Baum, president; Lieut. W. H. Wilder, vice president; Lieut. John A. Hornsby, secretary-treasurer; Lieut. L. E. Schmidt and Lieut. Frank W. Lynch, councillors.

The speakers of the evening were: Col. Stephenson, Capt. C. C. Billingslea and Col. Harvey.

Cardioneurosis has its basis in a change in the muscle, nerves, ganglia or specialized tissue of the heart.

Can Blood Be Transported Safely for the Wassermann Test?

The question is often asked, now that the value of the Wassermann reaction is so thoroughly established, if it is safe for the country or small city practitioner to send blood to a city laboratory for examination? The trip often takes 24 or more hours. Recently twenty-five of the best serologists and syphilographers in the country were asked the question, and they were, with two exceptions, of the opinion that under proper conditions, it is quite safe to send blood long distances. They agree that it is better to send blood serum alone. One writer says: "It is perfectly satisfactory to send blood for a Wassermann test by mail when the trip takes from eighteen to twenty-four or even forty-eight hours, if the blood has been carefully and properly prepared. The blood must be collected bacteriologically and chemically clean, allowed to clot firmly and the clear serum separated off. This clear serum may be placed in a sterile, chemically clean ampule and the ampule sealed with heat, using care to avoid raising the temperature of the serum. Or the serum may be placed in a clean small homeopathic vial and a rubber cork inserted which has been properly prepared to insure rigid cleanliness. Blood prepared in this way may be sent across the continent and arrive in perfect condition at the other end."

Another says: "If the serum is separated from the blood and inactivated in a water bath at 55° C. for thirty minutes, this serum may then be sent through the mail with perfect safety, so far as the results of the Wassermann reaction are concerned."

A third says: "Our experience has been that if the blood is withdrawn and placed in a sterile tube, allowed to coagulate, and the serum decanted, the latter can be safely sent by mail in cool weather. The entire blood if sent in this way becomes, through the shaking received, infiltrated with the haemoglobin and is spoiled. The serum itself travels in first-rate condition."

A careful observer is of the opinion, "That a Wassermann can be sent by mail when the trip takes eighteen to twenty-four hours if the proper technique, care and skill is exercised and if the blood is collected under aseptic precautions, and particularly if the serum is collected free from blood and inactivated for half an hour at 55° C. Reliable and satisfactory Wassermanns are posible six or eight months of the year if the serum, unseparated from the blood, is collected in the so-called "Wassermann vacuum tubes," provided they are not in transit longer than twelve to thirty-six hours."

Most of the serologists stated that it is safer to send blood in cool weather. One writer noted that during warm weather "we have all blood sent to us in a Thermos bottle, an arrangement which has proved perfectly satisfactory."

Here is one suggestion for those who send uncentrifuged blood: "If a tube is used in which a cork or other similar stopper can be pushed down near the level of the blood so that there is not much room for agitation and breaking up of the clot, the safety of the transmission is thereby increased."

We believe it is better, however, to allow the blood to stand, if no centrifuge is at hand, and then withdraw the clear serum from the top with a glass pipette.

Acting on the belief that normal sera, free from bacteria, will not give positive Wassermann reactions, if inactivated before testing, although kept at room temperature as long as a month, led Capt. C. F. Craig, U. S. Army, to experiment. He arranged with the laboratory of the Army hospital in San Francisco to send him in Washington duplicates of sera that had been tested there, so that the test might be repeated in Washington for the purpose of noting any changes which might have taken place in transit. Out of eighty specimens examined, sixty-six gave results in Washington identical with those in San Francisco. One was negative in the Pacific coast and positive at the Capital. This serum had a cloudy appearance and putrefactive odor, leading Capt. Craig to think some bacteria were present, and he demonstrated the fact by a series of experiments. Thirteen specimens developed thermostabile anticomplimentary bodies which prevented carrying out the test.

He says perfect asepsis must be carried out in taking the blood. The skin should be thoroughly washed with alcohol and the needle and the weight tube for collecting the blood should be sterilized.

The Physician's Library

Pharmacology; Clinical and Experimental. By Dr. Hans H. Meyer, of Vienna, and Dr. R. Gottlieb, of Heidelberg, Professors of Pharmacology. Authorized translation into English by John Taylor Halsey, M. D., Professor of Pharmacology, Therapeutics and Clinical Medicine, Tulane University. 604 pages, with 65 text illustrations, 7 in color. Price, $6.00. Philadelphia and London: J. B. Lippincott Company, 1914.

Believing that pharmacology is simply a portion of biology and that pathology is most essential in the study of disease this work happily combines the branches of the sciences. It presents scientific drug therapy from the physician's viewpoint as to the seat and cause of pathological conditions. The authors divide drugs into two classes, organitropic and etiotropic and their research work has been based entirely on this classification in the pharmacology of many parts of the body, as the central nervous system, digestion, circulation, respiratory system, blood and muscles, as well as the pharmacology of metabolism, heat regulation and inflammation is covered.

The subject is thoroughly handled and is worthy of the study of all interested in pharmacology.

Pathogenesis of Salvarsan Fatalities. By Dr. Wilhelm Wechselmann of Rudolph Virchow Hospital, Berlin. Translated by Clarence Martin, M. D., of St. Louis. Cloth. 145 pages. $1.50 net. St. Louis: Fleming-Smith Co., 1914.

This book is written by a man who doubtless has had more experience with salvarsan than anybody on earth. A year ago he had given 25,000 injections and he has added 10,000 since that time. The fact that he uses salvarsan more than ever is proof positive of his belief in its efficacy. He notes the various causes of deaths from the drug, recklessness, faulty technic and improperly distilled water largely and expresses the belief that with a more exact technic, careful adaptation of dosage to the individual case and observation of the urine, the danger will be reduced to a minimum. He is not a believer in the use of mercury with salvarsan, but he stands almost alone among the great syphilographers in this regard.

The book contains a great deal of helpful information.

(*Continued on p. 20.*)

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Water (boiled, then cooled)
16 fluidounces

Each ounce of this mixture has a food value of 6.2 calories—affording sufficient nourishment and in a form readily assimilable.

(*Continued from p. 200.*)

Dietetics. By Max Einhorn, Md. D., Professor of Medicine in New York, Post Graduate Medical School. Cloth, 156 pages. $1.00 net. New York: Paul B. Hoeber, 1914.

This little book takes in the lectures on diet Dr. Einhorn delivers at the Post Graduate. They completely cover the subject, going into the various phases quite extensively. No tables are attempted, but a most interesting resume of the range of diet is given.

Biology: General and Medical. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia. Second edition, thoroughly revised. Cloth, 475 pages, with 160 illustrations. $1.75 net. Philadelphia and London: W. B. Saunders Company, 1913.

This book not only treats general biology as such, but goes into the intricacies of medical biology very thoroughly. Working from the standpoint that medical science is merely a branch of biology, the author graphically reveals the relationship of medicine to biology and he makes one realize that without a knowledge of biology, medicine would be mere guess work. The book is intensely interesting.

International Medical Annual. A Year Book of Treatment. 32d year. Cloth, 716 pages, illustrated, $3.50. New York: E. B. Treat & Co., 1914.

In the endeavor to keep up with the rapid pace of medical progress it has been necessary to add over 100 pages to this very useful and helpful annual. Practically every important subject in medicine is covered. The latest innovations as Crile's anoci-association with novocain, quinin and urea, hydrochlorid, the uses of thorium and radium. Besredka's sensitized vaccines, salvarsan in pernicious anemia and amebic dysentery, benzol in leukemia and many others are well covered.

The book enables one to keep strictly up-to-date, and being shorn of verbiage the material is to the point.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by Henry W. Cattell, A. M. Vol. 1, 23d Series. Philadelphia and London: J. B. Lippincott Company, 1913.

This volume treats of Diagnosis, Treatment, Medicine, Pediatrics, Surgery, Obstetrics and Electrotherapeutics in a series of 19 papers. It is out of the question to pick out particular articles as they all carry messages of value. The report of ten cases of Pott's disease operated on by the Albee method by J. T. Pugh and a brief resume on the care of a woman during gestation by Greer Baughman are especially enlightening.

Volume IV of the 22d series is devoted to Diagnosis, Treatment, Medicine, Surgery, Gynecology, Economics and Insanity. It presents a feast of clinical material, illustrated in fine taste and especially well served. The clinics offer the busy man a valued means of keeping abreast of the times.

Diseases of the Nose, Throat and Ear. By Francis R. Packard, M. D., of the Philadelphia Polyclinic. 2nd edition. Cloth. 337 pages. Illustrated. $3.50 net. Philadelphia and London: J. B. Lippincott Co., 1913.

Packard presents a book especially adapted to the needs of the physician who is taking up special work in the diseases considered. The author, after years of postgraduate teaching, is peculiarly fitted to open up the realms of otorhinolarngology to the prospective specialist. A careful perusal of the pages convinces us that the book meets the requirements of the general practitioner, as the subject is handled in a thoroughly practical manner. Much of the matter in this edition is new, and all of it is well and lucidly presented.

Ten Sex Talks to Girls. By Irving D. Steinhardt, M. D., of Cornell University. Introduction by Dr. Rachelle S. Yarros. 193 pages. Illustrated. Cloth. $1.00 net. Philadelphia and London: J. B. Lippincott Co., 1914.

This series of talks shows the mother how to unfold the mysteries of life to her daughter delicately, modistly, but truly. One great reason why girls go wrong is because they are allowed to go out into life uninstructed. Mothers are often to blame for the misfortunes of their daughters. If a woman will read and conscientiously apply the precepts in this book, she will forearm her daughters. This little volume should be read by every mother and by every girl who has reached the age of puberity.

Immunity. Methods of Immuno-Diagnosis and Immuno-Therapy. By Dr. Julius Citron, University Clinics of Berlin. Translated by A. L. Garbat, M. D., German Hospital, New York. Cloth. 265 pages. Illustrated. $3.50 net. Philadelphia: P. Blakiston's Son & Co., 1914.

This book is intended for the practitioner who is little versed in laboratory matters, and it shows him in understandable language about the various reactions and their significance. The method of complement fixation, for example, is excellently explained. The book is one which will interest and instruct a large body of practitioners.

Modern Medicine. Its Theory and Practice. By American and Foreign Authors. Edited by Sir William Osler, Bart, M. D., Regius Professor of Medicine in Oxford University, and Thomas McCrae, M. D., professor of Medicine in the Jefferson Medical College, Philadelphia. In five volumes of about 1,000 pages each. Illustrated. Volume II. Cloth, $2.00 net. half morocco, $7.00 net. Philadelphia and New York: Lea & Febiger, 1914.

This volume is, in quality and excellence, quite in keeping with the standard set by its predecessor. It discusses protozoan and metazoan infections; diseases caused by physical, chemical and organic agents; diseases of metabolism and diseases of the respiratory tract, and among the 30 authors are Anders, Christian, Captain Craig, Edsall, Hare, Novy, Packard and R. P. Strong. Osler's presentation of the subject of syphilis is exhaustive and masterly. Craig's malarial fevers is the last word in that condition. Hawk discusses metabolism in an instructive manner, and the diseases of the respiratory tract by nine men brings out many new and important facts. The general manner of subjectal presentation, the authoritativeness of the material, the excellence of the typography and the beauty of the illustrations make this volume one of unusual worth.

BOOKS RECEIVED.

All books received will be acknowledged in this column, and those which warrant further notice will be given a more extended review in a later issue.

Treatment of Chronic Leg Ulcers. A Practical Guide to its Symptomatology, Diagnosis and Treatment. By Dr. Edward Adams. 122 pages. Cloth,

(*Continued on p. 22.*)

Do You Know

that between seventy and eighty per cent. of all cases of indigestion are due to an inability to digest and assimilate starchy foods?

Careful clinical study has shown this to be a fact, however, and since considerably over one-half of the daily diet of the average person is made up of the carbohydrates, the urgent necessity for effective treatment can be seen at once. Neglect to correct starch indigestion means a progressive increase of the difficulty and a constant nutritional decline that lowers vital resistance and renders the body susceptible to all manner of disease. To correct starch indigestion and overcome its consequent ill effects there is no remedy so promptly and uniformly effective as

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readily becomes a chronic condition since the toxemic patient lacks that initiative which is necessary to active physical excercise; thus ***cause*** and ***effect*** form a circle which must be broken by rational therapeutic treatment while proper hygienic conditions are being re-established.

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Cystogen-Aperient is not presented as a saline purgative, but as a rational therapeutic aid wherever treatment is based on elimination; it combines the laxative and tonic properties of Sodium Phosphate and Tartrate with the diuretic urinary-antiseptic and solvent action of Cystogen ($C_6H_{12}N_4$).

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DOSE: A teaspoonful in a glass of water t. i. d.

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(*Continued from p. 20.*)

$1.00. Published by The International Journal of Surgery Company, 100 William Street, New York City.

A Mind Remedy. By John G. Ryerson, M. D., 82 pages. Published April, 1914.

The Junior Nurse. By Charlotte A. Brown, R. N., Instructor in the Boston City Hospital; late Superintendent of the Hartford Hospital Training School, Hartford, Conn. 208 pages, illustrated. Cloth, $1.50 net. Published in 1913 by Lea & Febiger, Philadelphia and New York.

Bedside Haematology. An Introduction to the Clinical Study of the so-called Blood Diseases and of Allied Disorders. By Gordon R. Ward, M. D., Fellow of the Royal Society of Medicine, Medical Society of London, etc. 394 pages, illustrated. Cloth. Published in 1914 by W. B. Saunders Company, Philadelphia and London.

Infant Feeding. By Clifford G. Grulee, A.M., M.D. 314 pages, illustrated. Published in 1914 by W. B. Saunders Company, Philadelphia and London.

Infantile Paralysis. With Modern Method of Treatment, including reports based on the treatment of three thousand cases. By Henry W. Frauenthal, A.C., M.D., and Jacolyn Van Vliet Manning, M.D. 374 pages, illustrated. $3.00 net. Published in 1914 by E. A. Davis Company, Philadelphia.

A History of Laryngology and Rhinology. By Jonathan Wright, M.D. Director of the Department of Laboratories, New York Post-Graduate Medical School and Hospital. Second edition, revised and enlarged. Octavo, 357 pages, illustrated. Cloth, $4.00 net. Published in 1914 by Lea & Febiger, Philadelphia and New York.

Modern Surgery. General and Operative. By John Chalmers De Costa, M.D. 1,515 pages, illustrated. Published in 1914 by W. B. Saunders Company, Philadelphia and London.

THE UROLOGIC AND CUTANEOUS REVIEW, Jan., 1914.

I. **Pyelo-Radiography—A Clinical Study.**—By Frank Kidd, F. R. C. S. With Pathological Reports by H. M. Turnbull, M. D. Skiagrams by S. G. Scott., M. D., and Experimental Studies by E. C. Lindsay, F. R. C. S., London, England.

II. **Sunlight and Pigmentation.**—By Franz B. Solger, M. D., Rostock, Germany.

III. **The Antisyphilitic Triad.**—By Sanitaetsrat Dr. Jessner, Koenigsberg, Germany.

IV. **Syphilis Cicatrisans Atrophica.**—By A. Ravogli, M. D., and C. Goosman, M. D., Cincinnati, Ohio.

V. **Therapeutic Influence of Heat.**—Hyperemia on the Morbid Processes of Inflammation and Infiltration in the Urinary Tract. By Dr. Med. E. R. W. Frank, Berlin, Germany.

VI. **The Pathologico-Anatomical Alterations Caused in the Healthy Skin by Chrysarobin-Action.**—By Dr. Med. W. Kopytowski, Warsaw (Poland), Russia.

VII. **Contributions to the Etiology of Idiopathic Skin Atrophy.** (Dermatitis Atrophicans.)—By Privatdozent Dr. M. Oppenheim, Vienna, Austria.

VIII. **A Case of Pellagra in Japan.**—By Prof. K. Sakurne, M. D., and Dr. S. Yamada, Osaka, Japan.

IX. **The Treatment of Syphilis with Mercury, Arsenic and Calcium.** (Preliminary Report.)—By Dr. Med. Dreuw, Berlin, Germany.

(*Continued on p. 26.*)

MORTALITY STATISTICS OF THE UNITED STATES.

The mortality statistics of the United States for 1912 contained in the report just published by Director William J. Harris, of the Bureau of the Census, shows the total number of leaths registered was 838,251, corresponding to a death rate of 13.9 per 1,000 population. The rate is the lowest on record, that for 1911, previously the most favorable year, being 14.2. The year 1912 was also unusually healthful abroad, a new low mortality figure of 13.3 per 1,000 being established for England and Wales.

By sex, there were 459,112 deaths of males and 379,-139 deaths of females. The proportion of deaths of infants under 1 year to total deaths (17.6 per cent.) was slightly lower than that for 1911 (17.8 per cent.), Full details are given of the deaths during the first days, weeks, and months of life of the 147,455 babies who died before they reached their first birthday, but satisfactory figures for infantile mortality cannot be given, as the report states, because of the very general neglect of effective birth registration.

Diagrams show the variations of the death rate from all causes and important disease since 1900. Tuberculosis markedly decreased, although it still causes a vast number of unnecessary deaths—90,360, or 149.5 per 100,000 in 1912. This was over 10 per cent (10.8) of the total mortality. Next came organic diseases of the heart, with 86,179 deaths (adding endocarditis, they slightly exceeded tuberculosis), acute nephritis and Bright's disease (62,267), pneumonia (51,495), congenital debility and malformations (48,596), cerebral hemorhages and softening (46,797), cancer (46,531), and diarrhea and enteritis of infants under two years of age (42,482). There were 63,385 deaths from external causes, of which 49,775 were due to accident, 9,656 to suicide, and 3,954 to homicide. The suicide rate (16 per 100,000 population) was slightly lower than that for 1911 (16.2) and is the same as the average for 1906 to 1910.

Typhoid fever, with 9,987 deaths (16.5 per 1,000), showed a notable decrease from the preceding year (12,451) and a most gratifying reduction from the average rate for the five-year period 1901-1905 (32). In other words, it has ben cut in half in the last decade, although our rate is till high as compared with some European countries. A feature of the reports for 1912 and 1911 is the introduction of standardized death rates, instead of the crude death rates, which are sometimes misleading, on account of differences in the sex and age distribution of population.

Antiquity of Milk as a Food.

From time immemorial milk has been used as a food. It was necessary for the nomad tribes of Southern and Eastern Russia and Central Asia to have a milk preparation that could be carried and used in their wanderings. This they prepared from mare's milk and was called kumiz. Herodotus gives an account of it as used by the Scythians and Virgil sings of a tribe who drank of it.

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Ulceration or malignancy in the fundus of the stomach may cause active spasmodic contractions of the esophagus at the cardia, and this is frequently followed by considerable dilatation.

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THERAPEUTIC MEMORANDA.

Pituitary Gland Extract: R. von den Velden records some observations and experiments made with the view of ascertaining the effect of pituitary gland on the renal function (*Berl. klin. Woch.*, November 10th, 1913). Although these substances are in free use in obstetric practice, our knowledge of the pharmacology of the active principles is not extensive.

It has been stated that the extract effects a rise in diuresis in animals which is associated with an increase in volume of the kidney. Some authors describe a temporary vaso-constriction followed by a vaso-dilation of the renal vessels. The author found that in normal persons the subcutaneous injection of 2 c.cm. of hypophysin or 1 c.cm. of pituitrin decreases the secretion of urine, and at the same time the actual amount of sodium chloride. The total nitrogen excretion and the phosphoric acid remain undisturbed.

After the injection of pituitrin or hypophysin, and to a less extent after the ingestion of the former by the mouth, the kidneys of patients suffering from diabetes insipidus excrete a urine which is two or three times as concentrated as before. This may be expressed as a diminution of the excretion of water. The patient thus treated improved subjectively as the quantity of urine became less; the thirst became less, the feeling of dryness of the mucous surfaces disappeared, the appetite improved, and water was less frequently passed in the night. As soon as the treatment was interrupted the old symptoms reappeared in their original severity. The change in the urine affected the chlorides, the phosphates, and the total nitrogen in their percentage values, but not in their absolute quantities.

It therefore appears from these observations that extracts of the pituitary gland produce a diminution of quantity of urine in man, which is in fact limited to the water.—(*British Med. Jour.*, Feb. 28, 1914.)

Prevention of Post Partum Hemorrhage with Hypophysin.

Kreiss of Dresden very highly recommends intravenous injections of hypophysin from 0.5 to 1.0 c.c. in atony or hypotony. The uterus begins to contract continuously in from 10 to 20 minutes after the injection, and the hemorrhage ceases almost immediately. Strong, continuous labor pains follow until the uterus returns to medium tonicity. To increase the effect, an injection of 1 c.c. of tenosin may be injected either subcutaneously or intramuscularly. This method proved successful in over 30 of Kreiss' cases.—(*Muench. Med. Wochen.*, No. 6, 10, 2, 1914.)

The Hypophysis and Its Active Substances.

H. Fuehner of Freiburg observes that, contrary to the remarks of Popielski and Studzinsky, those substances which bring about the typical effect of blood pressure of the hypophysis, are dependent on components which are precipitated with phosphotungstic acid. A preparation obtained from the filtrate proved to be ineffective, according to Fuehner's experiments. The labor exciting effect of substances of the pituitary body is independent of the effect of increased blood pressure, and is principally contained in the precipitation of the phosphotungstic acid, and not in its filtrate.

Popielski's statements, therefore, cannot discredit the usually applied preparations, especially the hypophysin (Hoechst) which was examined by Fuehner.—(*Deutsche Med. Wochen*, No. 8, Feb. 19, 1914.)

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MONDAYS:

City Hospital—		
Neurology	Dr. Steinach	3:00 P.M.
Randalls Island Hospital—		
Laryngology, Rhinology and Otology	Dr. Yates	9:00 A.M.
Cumberland Street Hospital—		
Surgery	Dr. Ritch	2:30 P.M.
Laryngology and Rhinology	Dr. Stewart	4:00 P.M.
Surgery, Oral	Dr. Shea	4:30 P.M.
Kings County Hospital—		
Gynecology	Dr. McNaughton	9:00 A.M.

TUESDAYS.

City Hospital—		
Gynecology	Dr. Stearns	2:00 P.M.
Neurological Hospital—		
Neurology	Dr. Byrne	9:00 A.M.
Cumberland Street Hospital—		
Gynecology	Dr. Burnham	1:00 P.M.
Kings County Hospital—		
Obstetrics	Dr. Commiskey	10:00 A.M.
Surgery	Dr. Barber	11:00 A.M.
Genitourinary Surgery	Dr. Morton	2:00 P.M.
Coney Island Hospital—		
Surgery	Drs. Fiske and Bogart	10:30 A.M.
Surgery	Drs. Murphy and Lack	10:30 A.M.
Medicine	Drs. Hall and Nash	3:30 P.M.
Medicine	Drs. Hegeman and Byington	3:30 P.M.

WEDNESDAYS:

City Hospital—		
Obstetrics	Dr. Shears	2:00 P.M.
Neurological Hospital—		
Neurology	Dr. Maloney	10:00 A.M.
Cumberland Street Hospital—		
Surgery	Dr. Pallister	2:30 P.M.
Ophthalmology and Otology	Dr. Schenck	4:00 P.M.
Kings County Hospital—		
Orthopedics	Dr. Truslow	10:00 A.M.
Orthopedics	Dr. Napier	4:00 P.M.
Coney Island Hospital—		
Pediatrics	Drs. Beck and McQuillan	3:00 P.M.
Pediatrics	Drs. Pendleton and Van Wart	3:00 P.M.

THURSDAYS:

City Hospital—		
Surgery	Dr. N. W. Green	2:00 P.M.
Cumberland Street Hospital—		
Gynecology	Dr. Burnham	1:00 P.M.
Surgery	Dr. Ritch	2:30 P.M.
Ophthalmology and Otology	Dr. Stewart	4:00 P.M.
Kings County Hospital—		
Obstetrics	Dr. Commiskey	10:00 A.M.
Otology	Dr. Alderton	1:00 P.M.
Surgery	Dr. Barber	2:00 P.M.
Coney Island Hospital—		
Gynecology	Drs. MacEvitt and Mills	1:30 P.M.
Gynecology	Drs. Mayne and Rankin	1:30 P.M.
Rhinology and Laryngology	Dr. Tucker	1:30 P.M.
Surgery	Drs. Fiske and Bogart	3:30 P.M.
Surgery	Drs. Murphy and Lack	3:30 P.M.

FRIDAYS:

City Hospital—		
Ophthalmology	Dr. Wiesner	9:00 A.M.
Laryngology and Otology	Dr. Dougherty	2:30 P.M.
Neurological Hospital —		
Neurology	Dr. Abrahamson	9:00 A.M.
Cumberland Street Hospital—		
Surgery	Dr. Pallister	2:30 P.M.
Surgery, Oral	Dr. Shea	4:30 P.M.
Kings County Hospital—		
Gynecology	Dr. McNaughton	9:00 A.M.

(*Continued on p. 26.*)

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The Frequency of Amentia as Related to Sex.

Leta Stetter Hollingworth, of the Clearing House for Mental Defectives, New York, finds that more males than females are brought to the Clearing House in a ratio of about 1.3:1.0. At the age of 1-2 years the frequency for males and females is equal. From the age of 2 to the age of 16 there is a very marked preponderance of males. At the age of 16 years the curves cross and from that point on there is a very marked preponderance of females. Females survive in the social milieu till beyond the age of 16 years twice as frequently as males; females survive in the social milieu till beyond the age of 30 years three times as frequently as males. The Binet measuring scale shows that for all mental ages the average actual age at examination is older for girls than for boys—this difference becoming very marked after the mental age of 6 years. The figures show, for instance, that a female with a mental age of 6 years survives in society about as well as a male with a mental age of 10 or 11 years. The average deviations from the above averages are greater in all cases for girls than for boys, indicating that any male is much more certain to be brought to the Clearing House at a given average age than is a female of the same degree of defectiveness. Of the 159 women over 16 years of age, the majority had had a more or less secure economic basis for survival either in housework or in prostitution. The author concludes that the greater frequency of amentia among males has come to be rather commonly credited and is sometimes cited as a proof of the greater variability of males. But all the facts gleaned from these data point to the conclusion that if social pressures had applied equally to male and female, enough additional females would have come to the Clearing House to equal the 568 males. The figures are certainly sufficient to suggest that if our social habit and organization ever changes so that sex as such is no longer of commercial and economic value to women, and so that women become mentally competitive to the same extent as men, the number of females in institutions for the feeble-minded will be materially increased.—(*Medical Record*, Oct. 25, 1913.)

Paresis.

C. F. Ball, St. Paul, Minn., notices the recent general acceptance of the specific origin of paresis and the changes of opinion regarding so-called parasyphilis generally and asks how far back toward the primary infection we should date the disease. Together with this question arises the other, whether active and persistent specific treatment when the symptoms first appear would favorably influence the latter course. During the last two years Ball has made Wassermann tests of the blood in all his hospital patients, and if there were nervous symptoms with a positive Wassermann, lumbar puncture was made and three reactions tested. With the modern methods diagnosis is greatly facilitated. He quotes Nonne and Schüle as to the positive cure of paresis with seeming approval, but admits that possible relapses should always be reckoned with in giving a prognosis of apparent cure. For two years he has used injections of sodium nucleinate in his paretic patients, and gives particulars of some cases. He says he cannot claim very great success with it, but it seemed to exert a favorable influence in all but two.—(*J. A. M. A.*)

(*Continued from p. 24.*)

SATURDAYS:

City Hospital—		
Genitourinary Surgery	Dr. Fuller	1:00 P.M.
Neurological Hospital—		
Neurology	Dr. Walsh	2:00 P.M.
Kings County Hospital—		
Obstetrics	Dr. Commiskey	10:00 A.M.
Surgery	Dr. Barber	11:00 A.M.

(*Continued from p. 22.*)

I—Pyelo-Radiography—The author makes a plea for more extensive work of this character in diagnosis of kidney disease and as a preliminary in all operative work on the same organ. His list of case reports by which he attempts to substantiate his claims is a formidable one. He uses a seven per cent. solution of collargol, injected by means of gravity, at a maximum pressure of 30 mm. of mercury. Emphasis is placed upon the necessity for rapidity to avoid infiltration of the cortex of the kidney.

III—The Antisyphilitic Triad—Jessner shows the value of combining salvarsan, mercury and iodine in the treatment of syphilis. He has written at length on the various methods of administering these drugs, the advantages and disadvantages thereof, and the nature of idiosyncrasies which one may meet.

V—Frank gives a brief report of his method of using heat in urinary tract conditions, especially in beginning infiltrations of the urethra following long standing urethritis. His sounds are of hollow metal in the center of which are coils of wire. These coils are heated by connecting with the electric current. By means of a thermometer attachment he is able to determine the amount of heat used which is regulated by a current controller. By the use of proper fuses all danger of using too much heat is done away with.

IX—Dreuw is a disbeliever in salvarsan therapy and has substituted hypodermic injections of a combination of arsenic and calcium repeated at frequent intervals. His cases are as yet too few to determine the value of such treatment.

A "Safety First" Change in Nomenclature.

For years it has been a custom of the makers of things pharmaceutical to designate bichloride of mercury in tablet form as "Antiseptic Tablets."

Pointed criticisms of this practice has appeared in these columns from time to time, the point being made —and rightly so—that this title fails to indicate the poisonous character of such a tablet, and that in view of the very general use into which the word "antiseptic" has come of late years, its use in connection with so virulent a poison is not only misleading and ill advised, but really dangerous.

In deference to these ideas which have been expressed by some of the leading minds in the medical and pharmaceutical world, the Norwich Pharmacal Company have taken the lead in announcing a change in their nomenclature, whereby the coffin shape bichloride tablet made by them, and formerly called Antiseptic No. 1 Wilson, will hereafter be known and labeled by its U. S. P. title, "Corrosive Mercuric Chloride."

It is to be hoped that other pharmaceutical manufacturers will follow the lead of this house, who have thus courageously set aside the precedents of years in their efforts to aid in the conservation of human lives, and adopt some other title than Antiseptic Tablets for those made of Corrosive Mercuric Chloride.

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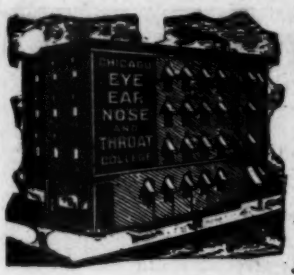

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ADDRESS A. J. GIVENS, M.D., STAMFORD, CONN.

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The American Protologic Society, at its sixteenth annual meeting at Atlantic City, June 22 and 23, will listen to papers from the following gentlemen: Samuel T. Earle, Baltimore; Walter I. Le Fevre, Cleveland; Frank C. Yeomans, New York; Jas. A. MacMillan, Detroit: V. Lee Fitzgerald, Providence; Dwight H. Murray, Syracuse; Samuel T. Earle, Baltimore; Alfred J. Soebel, San Francisco; William M. Beach, Pittsburg; Louis J. Hirschman, Detroit; Saml. G. Gant, New York; Jerome M. Lynch, New Hill, Boston; Collier F. Martin, Philadelphia; J. Rawson Pennington, Chicago; Granville S. Hanes, Louisville; J. M. Frankenburger, Kansas City; Arthur F. Holding, New York; Jas. A. Duncan, Toledo; George B. Evans, Dayton; Ralph W. Jackson, Fall River; John L. Jelks, Memphis.

Carabana Water Natural.

Owing to the chlorides of sodium and magnesium which it contains, this water has a well marked depurative action, which is neither violent nor excessive, as is often the case with iodides. Carabaña, on account of the large amount of salts that it contains, acts as a reconstituent, re-establishing nutrition by supplying an abundance of the mineral elements essential to the organism. It gives excellent results in herpetic diatheses and in cases of skin disease that often resists all other forms of treatment.

The most practical test for fat in stools is Talbot's. A portion of stool is smeared between a cover-glass and a slide, stained Suden iii (sat. sol. in 95% ethyl alcohol).

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PULMONARY TUBERCULOSIS
are
CLEANLINESS SUNLIGHT GOOD FOOD

But the food must be digested and assimilated: to stimulate the centres of assimilation and nutrition there is no better remedy at the physician's service than

Wampole's Preparation of Cod Liver Extract

The Best of Reconstructive Tonics

It builds up the run-down patient, allays the cough and assists Nature in overcoming the invading bacilli.

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Sixty Centuries of Kidney Disturbances.

The Babylonians in 4000 B. C. made as careful an examination of the urine as was in those days possible; even the earliest records known of Hindu medicine show that they also examined the urine, this examination being regarded as of great importance as an indicator of disease. Hippocrates tapped the abdomen and gave diuretics in the form of broom straws. Celsus laid special stress on diet, regular habits, advised baths and sweating and increased the number of diuretics. Erasistratus, grandson of Aristotle, in the fourth century before Christ, advanced the medical view of disease and invented the catheter. Ammonius about this time invented an instrument for crushing stones in the bladder. (In use to-day.)

William Solisto about the beginning of the fifteenth century described a disease which he called "hardness of the kidney," and gave as symptoms heaviness and decrease in the amount of urine, pain in back and dropsy.

Four centuries then passed before the next step, when Richard Bright described more fully the disease that bears his name.

Then another century of therapeutic inactivity in the treatment of diseases of the kidney followed, with, of course, the exception of surgical methods, until Renault corroborated forcibly all that had been proven regarding the internal secretions by giving the macerations of the young pig's kidney in cases of nephritis, with marvelous success. It naturally, at times, proved impossible to obtain, and often disagreeable to take, this soupy concoction of raw kidney, and for this reason the method had its drawbacks. But in 1906 Nephritin, a product embodying all the advantages of the above method of treatment, with none of its disadvantages, was given to the medical profession, and the first new and real therapeutic agent for Bright's and other forms of nephritis was completed.

—*When Did It Happen?*
Published by REED & CARNRICK.

The Nervousness of Alcoholism.

In the unstable nervous states following alcoholic debauches—irritability, sleeplessness, etc.—Bromidia (Battle) will be found an agent of exceptional influence in bringing about a disappearance of the symptoms. It exerts a soothing effect upon the cerebro-spinal centres and secures rest for the patient.

Trifacial Neuralgia.

N. T. Shields, New York, says that the really painful tic douloureux usually occurs about middle life or later, and is generally caused by lesions or lesion within the teeth. In simple cases a careful study will clearly indicate the teeth or tooth causing neuralgia and the proper treatment to apply for its relief. The tooth lesion may be secondary to some general constitutional condition affecting its nutrition, but he does not specify this point particularly in his remarks on the treatment of the teeth themselves, which, he says, has caused in his hands a permanent cure. Maxillary sinus complications are generally caused by the teeth and occasionally those of the frontal sinus itself. A sinus involvement he says, should always be cured through a tooth socket. —(*J. A. M. A.*)

For trigonal cystitis of females introduce a swab well soaked in a one or two per cent. solution of silver, through a tube. The bladder should be completely emptied before making the application.

WHEN THE STOMACH SIGNALS FOR AID

ELIXIR MALTOPEPSINE (Tilden's)

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Double Elimination.

Where the body is saturated with the waste-products of metabolism it is an important part of good medical treatment that these useless, harmful substances be thoroughly eliminated. The urinary system is a channel of evacuation, as well as the intestinal tract, and to free the system of toxic waste-products through both these channels is a logical procedure.

Defective elimination readily becomes a chronic condition since the toxemic patient lacks that initiative which is necessary to active physical exercise. A rational therapeutic treatment must be instituted while proper hygienic conditions are being re-established. In these cases, Cystogen-Aperient performs a double service by stimulating to normal function, and by disinfecting the urinary and intestinal tracts; Cystogen-Aperient (granular effervescent salt) combines the tonic and laxative properties of sodium phosphate and tartrate with the urinary-antiseptic and solvent action of Cystogen ($C_6H_{12}N_4$).

In certain cases in which the diagnosis of suspected tuberculosis is obscure, the *opsonic index* may afford valuable information.

The Value of Balsams.

The valuable therapeutic properties of the balsams have long been recognized for their usefulness in the treatment of gonorrhea. The administration of many of them, however, is followed by gastric and renal disorders. Sandalwood oil alone seems to have to a negligible degree these disagreeable by-effects. The physician has one preparation upon which he may absolutely rely, Gonosan, kava santal, manufactured by the well-known house of J. D. Riedel, Inc., Berlin, which recently celebrated the centennary of its establishment. Gonosan is made of the purest East Indian sandalwood oil, containing about 96% of santal, its active principle. Besides, it contains the mixed resins of Kava kava rhizomes. It has proved its worth particularly in preventing the spread of the inflammatory process to the posteria urethro Riedel & Co., 35 West 32d Street, New York, will send free samples, together with literature and pads containing dietary and hygienic instructions to physicians only, upon mentioning the MEDICAL TIMES.

Dysuria in children may result from vaginitis or urethritis.

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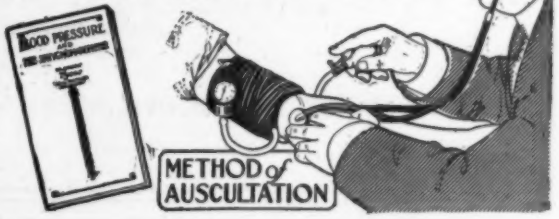

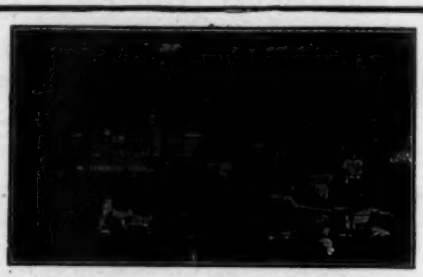

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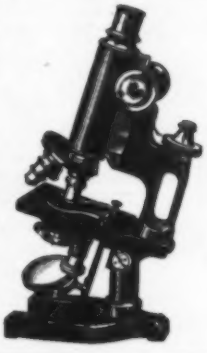

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Dunbar's pollen theory that the toxin absorption of certain plants and grasses are the causative effect of producing hay fever, has found an unqualified confirmation by practical demonstrations.

Ten years of thorough tests applied, a period of most gratifying success, records the eminent therapeutic worth of the antitoxic serum, **Pollantin.**

Its record, based and compiled from physicians' reports, sets forth that eighty per cent. of the cases treated received, in most instances decided in lesser, partial benefit.

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To Lighten the Heart's Burden.

Few remedies are more commonly needed than a safe and reliable cardiac tonic. It should impart new strength to the heart, and by giving it new power and tone relatively lighten the load it is carrying. Such a tonic is Cactina Pillets, a remedy that in the hands of thousands of competent physicians has been found most valuable. In countless cases of cardiac disease it has been employed with gratifying results.

It is indicated in all functional heart diseases, such as tachycardia, palpitation, feebleness; in the cardiac weakness and nervousness caused by excessive use of tobacco, tea, coffee or alcohol; to sustain the heart throughout many chronic and febrile diseases; to strengthen the heart of the convalescent; and for its support during the period of gestation. It has proven itself a safe cardiac tonic when the musculo-motor action of the heart requires strengthening or guarding. There is justification for the statement often made that Cactina Pillets is a persuasive cardiac tonic, not a therapeutic lash.

How often have you instructed your patient as to a particular laxative-cathartic, and how many times have you been disappointed in the results from your prescription because of the failure to obtain results from the evacuant? There is now offered the medical profession an exceptionally pleasant and agreeable cathartic called CITROLAX—an effervescing tablet—an ideal laxative-cathartic without excessive peristalsis, producing as nearly as possible complete defecation. If you have not had an opportunity to try this excellent combination, read their advertisement in this issue and send for samples.

A NOVEL EDUCATIONAL EXHIBIT AT ATLANTIC CITY.

Motion Pictures to Be Used as a Means of Demonstrating to the Profession the Methods Used For Producing Antitoxins, Bacterins, Vaccines and Curative Serum.

At the meeting of the American Medical Association, to be held in Atlantic City, June 22d to 26th, the H. K. Mulford Company will exhibit motion picture films, made by them at great expense showing the different processes employed in the production of biological products.

This will be the first time to our knowledge that motion picture films have been used for showing the processes used in the production of biological products.

Not only do the films show the laboratory methods used but also the actual application of these preparations from the clinician's standpoint.

A short description is thrown on the screen before each process is shown, describing the pictures, so that they bear their own explanation.

Because of the fact that no suitable space could be secured in the exhibit hall, the H. K. Mulford Company have arranged, through the courtesy of the Chalfonte, to show these pictures in the auditorium on the main floor of this hotel. These films will be exhibited several times each day and arrangements are being made so they will not conflict with the general or special sessions of the meeting.

Next to visiting the Mulford laboratories at Glenolden, which is a trip that every physician should avail himself of, an inspection of these films will convey a clear idea of what it means to provide adequate equipment for the production of the various biological products, particularly Diphtheria and Tetanus Antitoxin, Typho-Bacterin and preparations for the prophylaxis and treatment of infectious and contagious diseases.

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Perfect olive oil must not only be pure, but it must have quality. Purity is insured by using only the "virgin" oil from the first pressing of selected fruit. Quality can only be found in the fruit of certain favored districts, like Grasse, France, the home of Chiris (pronounced Sheris) Olive Oil.
The CHIRIS brand is extensively prescribed by physicians in cases of mal-nutrition and where a mild laxative is indicated. The value of large doses of olive oil in the treatment of gall stones, as originally suggested by Kennedy, has received much confirmation, and the experiments of Rosenberg show that this remedy increases not only the amount but also the fluidity of the bile.
Trial bottle, with history of CHIRIS and booklet containing 75 popular salad recipes, mailed on receipt of your request.
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Progress in the Treatment of Tuberculosis.

Eryphon, about 200 years after Hippocrates, originated percussion as an aid to physical examination and was the first to advocate the administration of large quantities of milk in Phthisis. Celsus, 350 years later, advised the change of climate, and up to the discovery of the tubercle bacillus by Koch no other distinct method of treatment was tried. The hope then expected from the vaccine treatment has again and again been rudely shattered, and not until about three years ago, when Bayle, of Cannes, France, began his work on the administration of raw spleen in cases of tuberculosis, has there been a distinct advance in this treatment for over twenty centuries.

—*When Did it Happen?*
Published by Reed & Carnrick.

Appendicitis.

P. S. Rossiter, Washington, D. C., gives an account of a case of appendicitis in which the retrocecally situated appendix was found attached along its whole length to the colon and had no mesentery and the cecum itself was bound down firmly by a Jackson's membrane. When the adhesions were freed and the appendix removed examinations revealed a chicken feather, 11 mm. long, at its apex. This combination of conditions with the small lumen of the appendix in this case ought, one would think, to have given rise to the appendicitis long before the introduction of the chicken feather as a factor. Possibly another foreign body than the sharp-pointed feather with its barbs could not have entered the appendix to give trouble.—(*J. A. M. A.*)

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Acting solely through its influence on physiologic processes, this effective remedy is not only free from drastic or unpleasant action, but its benefits are remarkably lasting.

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A safe and reliable cardiac tonic, invaluable for relieving and correcting abnormal heart action.

Non-cumulative in effect, Cactina Pillets can be used with gratifying success whenever the heart requires supporting, regulating or strengthening.

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An efficient remedy in all affections in which the gastro-intestinal glands need stimulating.

Exceptionally useful in atonic indigestion, malnutrition, convalescence from the acute diseases, and all digestive disorders characterized by deranged or depressed functions.

SULTAN DRUG CO., ST. LOUIS, MO.

The Story of Indigestion.

Again we turn to Hippocrates for our first knowledge of indigestion, in which he gave hot water for colics, black hellebore for vomiting and advised the limitation of certain foods. It remained, however, for Paracelsus, in about 1500, to bring out the idea that putrefaction was an essential element of digestion. Borelli published the first book on Physiology about 1700, in which he described digestion, and said that health depended upon the reaction of the body fluids.

It was not until the nineteenth century that gastric juice from the hog was given internally, although Dr. Physick had used it for years in treatment of ulcers. Dr. T. W. Ellsworth, of Hartford, Conn., was the first to try it internally. In 1851 he dissolved a piece of meat, lodged in a boy's throat, by giving a teaspoonful of gastric juice from a hog every hour. Pepsin and pancreatin were then imported, but to Reed & Carnrick belongs the honor of first making them in this country in 1862.

—When Did It Happen?
Published by REED & CARNRICK.

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In tubes of 20 tablets for the physician's convenience, and at a price correspondingly lower than quoted by some of our competitors for tubes of 25. Our tubes of 20 are of the proper length to fit in Pocket Hypodermic Cases.

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For Sale.—14 Plate Betz, 16 Plate Waite & Bartlett static machine with x-ray tubes: High frequency electrodes: Betz body, hot air apparatus, $50; water motor; Betz wall plate, McIntosh No. 6 wall plate, lamp wired in circuit, La Clanche hand polished oak case, 40 wet cells, $40; electrodes; army operating table; good condition guaranteed. Add., Dr. K. P. Sutton, Lewisburg, Ky. C-6.

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Will take other property in exchange, in city or country, at fair valuation. Address C. S. I., care of The Medical Times. —5

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Five acres (including small house), one mile from town, rich irrigated section, produces alfalfa, sugar beets, wheat, oats, barley, hogs, fruit and vegetables. Situated in the very heart of the Rocky Mountains; an ideal location for anyone suffering from overwork. High, dry, healthful. Elevation 5,800 feet. Terms easy. Address Health, care MEDICAL TIMES, New York.

American Medico-Pharmaceutical League.—18th annual convention, May 24, 1915. The first medical society in America to admit pharmacists. All desiring to read papers are invited to forward titles. Dues, $2 per annum, initiation fee $1. Physicians, pharmacists and dentists eligible. Eugenie R. Eliscu, M. D., Treasurer, New York City; Samuel F. Brothers, M. D., Corresponding Secretary, 96 New Jersey Avenue, Brooklyn, N. Y.

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